A STUDY ON

AZHAL KEEL VAAYU

(OSTEOARTHRITIS)

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CONTENTS

Introduction

INTRODUCTION

"தெய்வத்தால் ஆகாதெனினும் முயற்சி தன்
மெய்வருத்தக் கூலி தரும்".

Before seeing the evolution of various systems of medicine, let us see a few words about the evolution of earth and its mankind. The history of the earth describes the most important events and fundamental stages in the development of the planet Earth from its formation 4.578 billion years ago to the present day. All branches of natural science have contributed to understand the concept of the main events of the Earth's past. For example

Formation of universe is well explained in Siddha text books like "தோற்றக்கிரம ஆராய்ச்சியும் சித்த மருத்துவ வரலாறும்" which quotes that basic principle for evolution is

"உள்ளது போகாது இல்லது வாராது" and

"மாற்றத்தால் ஆயது இவ்வுலகம்"

Biological and Geological changes have been constantly occurring on our planet since the time of its formation causing continuous evolution of organisms. In the origin of species, Charles Darwin (1859) hypothesized that new species arise by the modification of existing one – that the raw material of life is life.

The primitive man due to civilization starts to move away from nature and slowly disease entered the world. So based on the requirement man gradually acquired knowledge about the medicine.The term Medicine arose out of the primal sympathy of man with man, out of the desire to help those in sorrow, need and

sickness. The first lessons of medicine came to primitive man by injuries, accidents, bites of beasts and serpents, perhaps for long ages it is not appreciated by his child like mind but, little by little, such experiences crystallized into useful knowledge.

The concept of Siddha system is based on fundamental principles of five basic elements of the universe, 96-Thathuvams, three humours and seven thathus (physical constituents of the body). The three humours namely vatham, pitham and kabam exists in their appropriate ratio. When the harmony of the above said humours get deranged owing to a relative increase or decrease of any one or more of the principle humours, disease is caused. The alteration in the normal ratio produces diseases. The sign and symptoms are produced according to the particular deranged kuttrams.

The intention of this attempt was to bring forth a study depicting the origin, growth and efficacy, authorship for each principle or method or receipt of Siddha medicine and to provide a step by step evaluation of its growth. A comparative study with other system of medicine and an analysis based on the results of those studies will help us to prove the principles on which the system stands.

It is needless to say that the science of medicine is one of the fundamental requirements to mankind for its well being and survival.

Siddha is the oldest, complete, internally consistent system of medicine in the world and considered by many to be the mother of all medicine. Pride of the earliest origin of Indian system of medicine is well understood from the earliest

literature on Indian medical practice which seems to be appeared during the Vedic period in India from the early Iron Age.

The ultimate aim of every system of medicine is to give health to an individual. In these the Siddha System of medicine differs from other system of medicine by giving complete physical, mental and social well being of an individual by its various tools like medicine, meditation, yoga, varmam, massage and its unique social and preventive medicine which is quoted by Theraiyar in 'Pini anuga vithi'

"Health is a state of complete physical, mental and social well being and not merely an absence of disease" is the widely accepted definition of **health** given by **WHO** (world health organization).

Thirumoolar quotes that

"மறுப்பது உடல்நோய் மருந்தெனெலாகும்
மறுப்பது உளநோய் மருந்தெனச்சாலும்
மறுப்பது இனிநோய் வாராதிருக்க
மறுப்பது சாவையும் மருந்தெனலாமே."

It can be thus summarized that the Siddha system is primarily holistic and is largely focused on promotive and preventive health.

Knee pain is the commonest symptom seen in people above 40 years which affects their daily activities and drives them to consult a doctor. In Palayamkottai Government Siddha Hospital the annual consultation rate for knee pain holds the Numero Uno position.

According to Siddha system of medicine knee pain is the major symptom of **keel vaayu**. The word ***keel*** means the ***hinge joint*** and the word ***vaayu*** means the ***vali or vatham***. The increased vali or vatham affects the joint producing knee pain. **Azhal keel vaayu** comes under the 10 classifications of keel vaayu. *Azhal keel vaayu* is characterized by symptoms like joint pain, swelling, tenderness, stiffness and restricted movements with a characteristic sound and therefore it can be compared with osteo arthritis of knee.

Osteoarthritis is a chronic degenerative disorder of multi factorial etiology characterized by loss of articular cartilage, hypertrophy of bone at the margins, subchondral sclerosis and range of biochemical and morphological alterations of the synovial membrane and joint capsule. Typical clinical symptoms are pain, particularly after prolonged activity and weight bearing; whereas stiffness is experienced after inactivity.

Primary Osteoarthritis is mostly related to aging. It can present as localized, generalized or as erosive osteo arthritis. Secondary osteoarthritis is usually followed by another disease. It is the second most common rheumatological problem and it is the most frequent joint disease with prevalence of 22% to 39% in India. Osteoarthritis the most common form of arthritis is a major contributor to functional impairment and reduced independence in older adults.

The WHO estimates that 70 million Indians are victims of Osteoarthritis, nearly 80% of them are elderly. In India 5.3% of males and 4.8% of females are aged more than 65 years. Old age cannot be healed or prevented however much can be done by health workers in helping the elderly to lead a normal life, which is

necessary for them to perform their activities of daily living(ADL) smoothly. The commonest obstacle for elderly to carry out ADL is the problem of joint pain and decreased mobility. The prevalence of this disorder in elderly group is as high as 85%. This high incidence is the result of its prevalence among menopausal women.

Shockingly the study conducted by TNS called TNS AROGYA found that in the age group 25-35 years, Osteoarthritis figures as the second most prevalent disease after diabetes. It also found that there is high incidence of Osteoarthritis, because awareness about the disease is very low compared to awareness about diseases like diabetes, HIV and cancer.

Also gastro intestinal toxicity is present in 50% of NSAID users and 5.4% develop a more serious event requiring hospitalization due to its frequent use. Hence Osteoarthritis represents a major cause of morbidity and disability as well as significant economic burden on patients. This study reviews different aspects of Osteoarthritis with an emphasis on early treatment with different modalities to minimize the major physical, mental, social and economic trauma through Siddha system of medicine.

Aim and objectives

AZHAL KEEL VAAYU

AIM AND OBJECTIVES

AIM:

The aim of this dissertation is to bring out the most acceptable, applicable, and affordable drug without the side effects from Siddha system of medicine for degenerative diseases like Azhal keel vaayu (osteoarthritis)

OBJECTIVES:

1. **Primary objectives**

To evaluate the clinical efficacy of Amirtha Kandhi Kukkil Vallathy as internal medicine and Ilagu Vida Mutti Thylam as external medicine for the disease Azhal keel vaayu (osteoarthritis).

2. **Secondary objectives**

- To study the efficacy of additional therapies like varmam, Thokkanam (massage) and asanas in treating the disease along with the internal and external medicines.
- To discuss the various literary evidences in both Siddha and modern text books for the diseases Azhal keel vaayu
- To confirm the diagnosis in Siddha system with the help of modern parameters.
- To know the extent of correlation of features given under azhal keel vaayu with the features of osteoarthritis there by showing the highness of siddhars.
- To know the chemical and phytochemical analysis of the selected drug.
- To study the Pharmacological analysis of the selected drug.

- To have an idea of an incidence of Azhal keel vaayu with reference of age, sex, Socio economic status, habits and family history related to any psychosomatic problems, land where they live (nilam) and climatic changes (Paruva Kalam).
- To make an awareness among the patients in order to avoid further degeneration.

Review of literatures

AZHAL KEEL VAAYU

Siddha literatures

AZHAL KEEL VAAYU

SIDDHA ASPECTS

The concepts of Siddha system are based on fundamental principles of five basic elements of the universe, 96 -Thathuvams, three humours and seven thathus (Physical constituents of the body).

Vatham, pitham, kabam are called as three humours of the human system.In normal persons these three humours always exist in their appropriate ratio. When the harmony of the above said humours gets deranged owing to a relative increase or decrease of any one or more of the principal humours, disease is caused.

As illustrated in **Indian Materia Medica Vol I,** The theory of Vatham, Pittham and Kabham begins where modern physiology ends.

The theory of vatham, pitham and kabham was a great discovery, which is unfortunately misunderstood by western scholars judging by the wrong mercenary translations rendering these terms as wind, bile and phlegm.

It must be remembered that the theory of vatham, pitham and kabham not only mean the old exploded humoral theory.

The term, ***'Vatham'*** not only simply imply 'Wind' but also comprehends all the phenomena which comes under the functions of the **Central and Sympathetic nervous systems** and the function of vatham is controlled by central nervous system as quoted in the udal thathuvam text book by Prof.Dr.P.M.Venugopal, H.P.I.M.,

Like that, the term ***'Pitham'*** not only mean 'Bile' but signifies the functions of ***thermogenesis*** (or) heat production and ***metabolism***, comprehending in its scope the ***process of digestion***, ***coloration of blood*** and formation of various ***secretions and excretions*** which are either the means or the end of ***tissue combustion*** and all these functions are controlled by **Autonomous nervous system.**

The term '***Kabham'*** not only mean 'phlegm' but it is used primarily to imply the functions of ***thermotaxis (or) heat regulations*** and secondarily formation of the various ***preservative fluids (e.g.) mucus, synovia***, and its functions are maintained by the cells.

These principles known as vatham, pitham, and kabham occur, in ***2 forms.***

An ***invisible or essential form***, which mainly guide the physiological processes pertaining to them naturally. It is called as sookuma thegam in the Siddha texts.

A ***crude or visible form***, the products (as secretions or excretions) of those processes induced by these essential forms. It is called as Thoola thegam in the Siddha texts.

The relation between these two forms are very close, so that derangement of the essential form of one principle gives rise at once to increased or morbid secretions and excretions of that principle

By knowing these basic principles we can easily study cause, classification, diagnosis and treatment of the disease.

உணவு செயல் ஆகியவற்றின் மாறுபாடுகளால், ஐம்பூதமயமான ஏழு உடற்தாதுக்களாலான உடலிற்கு வளி, அழல், ஐயம், என்ற மூன்று உயிர் தாதுக்கள் மிகுந்தோ குறைந்தோ நோய் ஏற்படின் ஐம்பூத அடிப்படையில் உண்டான அறுசுவைகளாலான மருந்து பொருட்களைக் கொண்டு பரிகரிக்கவேண்டும்.

கீல் வாயு:-

சித்த மருத்துவத்தில் எண்பத்து நான்கு வகை வளி நோய்கள் பற்றிக் கூறப்பட்டுள்ளது. அழல் கீல் வாயு என்பது, கீல்வாயு என்ற தலைப்பின் கீழ் கூறப்பட்ட பத்து வகைகளுள் ஒன்று. கீல்வாயு என்பது மூட்டுகளில் ஏற்படும் நோய்களைக் குறிப்பதாகும்.

According to ***Sabapathy manuscript*** Azhal keel vayu comes under the classification of ten Keel vayus. In Keel vayu the mostly deranged factor is Vatham. So Keel vayu comes under the vatha diseases according to thridosha theory. It is also confirmed by ***Agasthiar in Agasthiar Gunavagadam.***

"தானாக கீல்வாத ரோகம் பேரை

.....

நோய் தனக்கு பாகியாய் வாதரோக மென்பார்

நுட்பமுள்ள வாதரோக மெண்பதுந் தான்

ஆய்ந்தெடுத்து இதற்குள்ளே அடக்கம் பாரு

....."

-அகத்தியர் குணவாகடம்

வேறு பெயர்கள் :-

சந்துவலி, மூட்டுவலி, மேகசூலை, முடக்கு வாயு, ஆமவாதம், சந்து வாதம், சூலைகட்டு, சந்திக சிலேஷ்ம ரோகம், வாதசூலை, வாயுரோகம்.

"தானான கீல்வாத ரோகம் பேரை
சாற்றுகிறேன் நீயறிய விபரமாக"

-அகத்தியர் குணவாகடம்.

காரண பெயர்கள் :-

நோயக் காரணம்	:	மேக சூலை
முக்குற்ற நிலை மாறுபாடு	:	வாத சூலை
		சந்திக சிலேஷ்ம ரோகம்
இடத்தைக் கொண்டு	:	சந்து வாதம்
		மூட்டு வலி
		சந்து வலி
		ஆம வாதம்
குறிகுணங்களைக் கொண்டு	:	சூலைகட்டு
		முடக்குவாதம்.

Description of the nomenclature

Azhal keel vaayu = Azhal + Keel + Vaayu

Azhal = Pitham

Keel = Hinge Joint

Vaayu = Vatham

Initially the joint is affected by the vitiated vatham. Pitham and kabam accompany later. It is a disease which is common in pitha kaalam (middle 1/3 of the lifespan).

நோய் இயல் : -

கீல்வாயு என்னும் வளி நோயானது வலி, வீக்கம், குத்தல், மூட்டுகளை அசைக்க சிரமம், விறைப்புத்தன்மை, சில நேரங்களில் அல்லது சில நோய் நிலைகளில் சுரம், பசியின்மை, சோகை ஆகிய குறிகுணங்களை உடையதாகும்.

"வளியுயமைந் தன்னிலை கெட்டு
வலியுடன் வீக்கச் சுரமும் காய்ந்து
மூட்டுகள் தோறும் முடுக்கியே நொந்து
மூட்டுகள் தன்னில் நீரும் சுரந்து
தாங்கொணா வலியுமா நொந்திடுமம்மே"

-சபாபதி கையேடு.

வாதமும், கபமும் தன்னிலை கெடுவதால் மூட்டுகளில் வலி, வீக்கம், நீர்கோர்த்தல் ஆகியவை பிறக்கின்றன.

நோய் வகைகள் : -

1. வளி கீல் வாயு
2. **அழல் கீல் வாயு**
3. ஐய கீல் வாயு
4. வளி அழல் கீல் வாயு
5. அழல் வளி கீல் வாயு
6. வளி ஐய கீல் வாயு
7. அழல் ஐய கீல் வாயு
8. ஐய வளி கீல் வாயு
9. ஐய அழல் கீல் வாயு
10. முக்குற்ற கீல் வாயு

பொதுவாக கீல்வாயு நோய்கள் வரும் வழி :

உணவாதி செயல்கள்,அன்றாட பழக்கவழக்கங்கள், ஆமதோடம், சுற்றுப்புற சூழ்நிலைகள் ஆகியவை முக்குற்றத்தில் மாறுபாடு ஏற்படுத்தி நோயை உண்டாக்குகிறது.

Environmental factors (புற சூழ்நிலைகள்):

"வாத வர்த்தனை காலமேதோ வென்னில்
மருவுகின்ற ஆனி கற்கட மாகும்
ஆதவைப் பசியோடு கார்த்திகை தன்னில்
அடருமே மற்ற மாதங்கள் தன்னில்
போகளே சமிக்குகின்ற காலமாகும்"
பொருந்தியே யிவர் தொழில் தான் கண்டிறத்தல்
காதவே கண்மூடல் கைகால் சைத்தல்
கடிந்தோட்ட முடக்கலொடு நீட்டவென்னே"

-யூகி சிந்தாமணி பாடல் 245.

It is said that the vatha diseases are precipitated in the months from Aani to Karthigai (June to December), hence the seasonal factors are involved and facilitate the vatha diseases.

"பதுமத்தைப் பூக்க வைக்கும் பானுமிக்க காயும்
முதுவேனி லிற்பு விற் நீர் முற்றும் - கதுமென
வற்றும் கபஃகும் வாயுமிகும் வாழ்மாந்தர்க்
குற்ற நலிக் கேதிதென் றோது"

-மருத்துவர் தனிப்பாடல்

முதுவேனிற் காலத்தில், சூரிய வெப்பத்தின் காரணமாக பெரும் வாரியாக நீர் ஆவியாக்கப்பட்டு பூமியில் வறட்சி நிலவும். அதுபோல் நமது உடலில் வறட்சி ஏற்பட்டு வளிநோய் வருவதற்கு ஏதுவாகிறது.

Diets that increase vatha diseases (உணவாதி செயல்கள்):

"வளிதரு காய் கிழங்கு வரைவிலா தயிவல் கோழை
முளிதயிர் போன்மிகுக்கு முறையிலா வுண்டி கோடல்
குளிர்தரு வளியிற் றேகங் குனிப்புற வுலவல் பெண்டிர்
குளிதரு மயக்கம் பெற்றோர் கடிசெயல் கருவியாமாமல்"

-சபாபதி கையேடு

"தொழில்பெறு கைப்புக் கார்த்தல், துவர்த்தல் விஞ்சுகினுஞ் சோறும்
பழையதாம் வரகு மற்றைப் பைந்தினை யருந்தினாலும்
எழில்பெறப் பகலுறங்கி இரவினிலுறங்காததாலும்
மழை நிகர் குழலினாலே வாதங்கோ பிக்குங்காணே"

-பரராச சேகரம்

Vatha disease is caused due to the following precipitating factors:

- Excessive intake of tubers
- Excessive intake of chill foods
- Wandering in chill air
- Getting drenched in rain
- Living in hilly region
- Excessive sexual intercourse and
- Heredity

- Excessive intake of bitter, astringent, acrid taste food, intake of varagu, thinai and altered sleep pattern also contribute to vatha disease.

Habits(நித்திய செயல்கள்):

"வெய்யிலில் நடக்கையாலும் மிகத் தண்ணீர் குடிக்கையாலும்
செய்யிழை மகளிரைச் சேர்ந்தனு பவிக்கையாலும்
பையனே உண்மையாலும் பாகற்காய் தின்கையாலும்
தையலே வாதரோகம் சனிக்குமென் றறிந்துகொள்ளே"

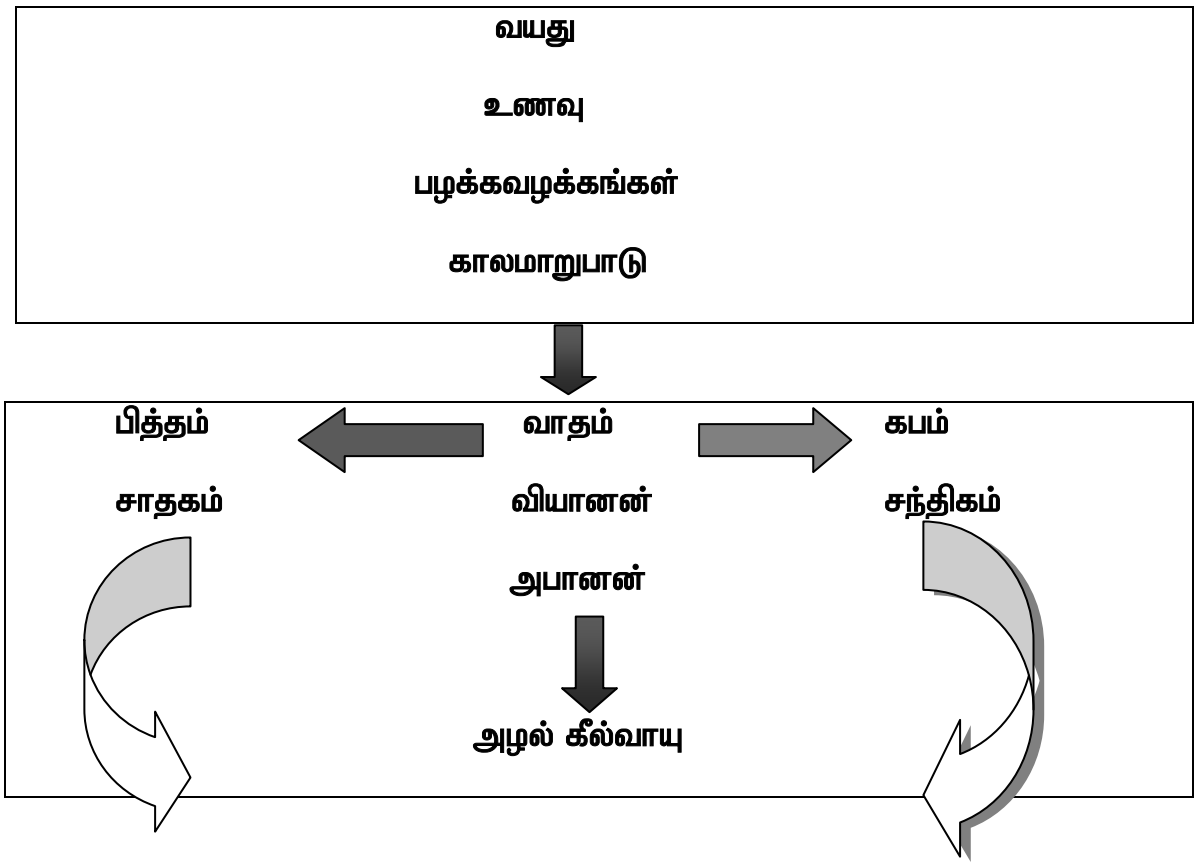
-தேரையர் வாகடம்

The factors like, excessive walking in hot sun and excessive intake of bitter guard etc, also disturbs the normal functions of Vatham.

Involvement of Mukkutram i.e. Vatham, Pitham and Kabam:

- Samanan and viyanan are affected in vatham. In some cases Abanan is affected and leads to constipation.
- In pitham, sathaga pitham is affected.
- Santhigam is affected in Iyyam. And so Avalambagam is also affected.

நோய் வரும் வழி



வாதம் மிகு குணம் :

"அறியவிம் மூன்றின் தன்மை சொன்னார்நந்தி

எறிய நல்வாத மெறிக்குங் குணங்கேளு

குறியெனக் கைகால் குளைச்சு விலாச்சந்து....."

-திருமூலநாயனார் சிகிச்சாரத்னதீபம்.

வாத நோயில் குத்தல் வலி, சந்துகள் நோதல், வயிறு பொருமல், குடலிறைச்சல், மலச்சிக்கல் போன்ற குறிகுணங்கள் தோன்றும்.

"வாதவீறு அன்னமிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்

மோதுகட்கு ரோகம் சுரமுண்டா மிருமலுமா முறங்காதென்றும்

ஓதுதரிய வாதமனலாகு நடுக்கமுண்டாம் பொருள் களயர்ந்த

தீதெனவே நரம்பித்து சந்துகள் தோறுங்கடுக்குந் திமுந்தானே"

-தேரையர் வாகடம் .

வாதம் மிகும்போது பசியின்மை, உடல் கடுப்பு, சுரம், இருமல், உறக்கமின்மை, உடல் நடுங்கல், நரம்புத்தளர்ச்சி, சந்துகள் தோறும் குடைதல் போன்ற குறிகுணங்கள் தோறும்.

"தக்க வாயு கோபித்தால் சந்துளைந்து சூலைநோவா
மிக்க கொட்டாவி விட்டங் கெரியு மலங்கெட்டும்
ஒக்க நரம்பு தான் முடங்கு மலர்ந்து வாய் நீரூறிவரும்
மிக்க குளிரும் நடுக்கமாய் மேனி குன்றி வருங்கானே"

-தேரையர் வாகடம்.

வாதம் மிகும்போது மூட்டுகள் தோறும் வலி, மிகுந்த கொட்டாவி, மலச்சிக்கல், நரம்புத்தளர்ச்சி, வாய் நீருறல், மிகக்குளிர்ச்சி, உடல் நடுக்கல், போன்ற குறிகுணங்கள் தோன்றும்.

Clinical features of Keel Vayu:

"பித்த கீல்வாயு தன்னாற் பிறங்கு கீல்முட்டு வீங்கிச்
சித்தர் செய் மருத்துவத்துஞ் சீர்படாதன்மைத்தால்
தத்தறு காய்ச்சல் கண்டு சாலவே தனைதான் தந்தே
மெத்தற சிகிச்சை தன்னால் மென்மேல் நீக்குமப்பா"

-சபாபதி கையேடு

- முட்டிகளில் வீக்கம் உண்டாகும்.
- முட்டிகளில் வலி காணப்படும்.
- தீக்குற்ற மிகுதியால் கீல்களின் பசை வறண்டு, பசையற்ற கீல் அசையும் போதெல்லாம் ஒலி உண்டாகும்.
- சில வேளைகளில் கீல்கள் பொருத்துகள் ஒன்றொடொன்று ஒட்டிக்கொண்டு மடக்க முடியாமல் காணப்படும்.

Diagnosis in Siddha:

Piniyari muraigal (Method of Diagnosis) is based upon three main principles,

1) Poriyal Arithal
2) Pulanal Arithal
3) Vinaathal

ஞானேந்திரியங்களின் ஆய்வு :

செவி	ஒலியை அறிய செய்தல்	இயல்பு
மெய்	உடலில் ஊற்றை அறிதல்	முழங்கால் மூட்டுகளில் வீக்கம், வலி
கண்	ஒளியை அறிய செய்தல்	இயல்பு
நாக்கு	சுவையை அறிய செய்தல்	இயல்பு
மூக்கு	வாசனை நுகர செய்தல்	இயல்பு

Poriyal Arithal (Inspection):

"Poriyal arithal" means examining the "Pori" of the patient by the "Pori" of the physician for proper diagnosis. Pori is considered as the "Five sense organs" of perception namely,

1) Mei (Skin)
2) Vaai (Tongue)
3) Kan (Eye)
4) Mookku (Nose)
5) Sevi (Ear)

கன்மேந்திரியங்களின் ஆய்வு :-

வாய்	வசனிக்க செய்யும்	இயல்பு
கை	இடுதலும், ஏற்றலும் செய்யும்	இயல்பு
கால்	நடக்கச் செய்யும்	முழங்கால் மூட்டுகளில் வலி, நடக்க சிரமம்
எருவாய்	மலத்தை கழிக்கும்	மலச்சிக்கல்
கருவாய்	கரு, சுக்கிலத்தைக் கழிக்கும்	இயல்பு

Pulanal arithal (Palpation):

Pulan are five senses. They are,

1) Smell
2) Taste
3) Vision
4) Sensation of touch
5) Hearing

"Pulanal arithal" means examining the "Pulan" of the patient by the Physician to diagnose a disease.

Vinaathal (Interrogation):

Vinaathal is gathering information regarding the history of disease, its clinical features etc., from the patient or his/her close relatives usually when the patient is not in a position to speak or in the case of a child.

ENNVAGAI THERVUGAL (Eight diagnostic Tools):

It is a unique method of diagnosis in Siddha system of medicine. They are clearly explained by the Siddhar Theraiyar.

"நாடி ஸ்பரிசம் நா நிறம் மொழி விழி

மலம் மூத்திரமிவை மருத்துவராயுதம்"

-நோய் நாடல் நோய் முதல் நாடல் (முதல் பாகம்)

1. Naadi (Pulse):

In Azhal Keel Vaayu the following Naadi can be seen commonly. Vathapitham, Vathakabam, Pithavatham, Pithakabam, Kabavatham.

2. **Sparisam (Sensation to touch):**

In Azhal keel vaayu mild warmth is noticed over the affected joint and crepitus is felt on active movements on the affected knee joint.

3. Naa (Tongue):

In Azhal keel vaayu no abnormality is seen in Naa.

4. Niram (Colour):

In Azhal keel vaayu no abnormality is seen in Niram.

5. Mozhi (Voice):

In Azhal keel vaayu no abnormality is seen.

6. Vizhi (Eyes):

In Azhal keel vaayu no abnormality is seen. As it is a disease of elderly population, in some cases, vizhi is found to be altered or affected.

7. Malam (Faeces):

In Azhal keel vaayu constipation was reported in some cases.

8. Moothiram (Urine):

In urine (Moothiram) Neerkkuri and Neikkuri (Oil on urine sign) examination are also done.

Neikkuri:

"அருந்து மாறிரதமும் அவிரோதமதாய்
அ:.கல் அலர்தல் அகாலவூண் தவிர்ந்தழற்
குற்றள வருந்தி உறங்கி வைகறை
ஆடிக் கலசத் தாவியே காதுபெய்
தொரு முகூர்த்தக் கலைக்குட் படுநீரின்
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே"

-சித்த மருத்துவாங்க சுருக்கம்.

Prior to the day of urine examination the patient is instructed to take a balanced diet and quantities of food must be proportionate to his routine intake.

The patient could have no disturbed sleep. After waking up in the morning, the first urine voided is collected in a clear wide mouthed glass dish or China clay container and is subjected to analysis of "Neerkkuri and Neikkuri" within one and a half an hour.

The collected specimen was examined by the following method. The collected urine specimen is kept in a glass dish or china clay container and observed under direct sunlight without shaking the vessel. Then drip one drop of gingelly oil and observe the spreading pattern and concludes as follows,

"அரவென நீண்டின:.தே வாதம்
ஆழிபோற் பரவின் அ:.தே பித்தம்
முத்தொத்து நிற்கின் மொழிவ தென் கபமே
அரவில் ஆழியும் ஆழியில் அரவும்
அரவின் முத்தும் ஆழியில் முத்தும்"

-சித்த மருத்துவ நோய் நாடல் நோய் முதனாடல் திரட்டு

b. Neerkkuri:

"வந்த நீர்க்கரி யெடை மணம் நுரை எஞ்சலென்

றைந்திய லுளவை யறைகுது முறையே"

-சித்த மருத்துவாங்க சுருக்கம்

Urine is examined for the following neerkkuri:

- Niram - Colour
- Edai - Specific Gravity
- Manam - Smell
- Nurai - Frothy nature
- Enjal - Quantity of urine voided

Apart from these, frequency of urination, abnormal constituents, such as sugar, protein, presence of blood, pus, presence of crystals also to be found out.

In Azhal keel vaayu straw or hay coloured urine was noticed in Neerkkuri.

PARUVA KAALAM (Seasonal variations):

Sl.No	STATE OF KUTTRAM	KAALAM
1.	Vatham thannilai adaithal	Munpani kaalam, Pinpani kaalam, koothir kaalam, elavenil kaalam
2.	Vatham thannilai valarchi	Muthuvenil kaalam
3.	Vatham vetrunilai valarchi	Kaarkaalam

முதுவேனிற் காலத்தில் நமது உடலில் வறட்சி ஏற்பட்டு வளிநோய் வருவதற்கு ஏதுவாகிறது.

திணை (Geographical distribution)

குறிஞ்சி : மலையும் மலை சார்ந்த பகுதியும்

முல்லை : காடும் காடு சார்ந்த பகுதியும்.

"முல்லை நிலத்தமைய முந்நிரை மேவினுமல்.....
வாதமொழி யாததனுண் மன்னு மவைவழிநோய்ப்
பேதமொழி யாதறையப் பின்பு"

-பதார்த்த குண சிந்தாமணி

மருதம் : வயலும் வயல் சார்ந்த பகுதியும்

நெய்தல் : கடலும் கடல் சார்ந்த பகுதியும்

"நெய்தனில மேலுப்பை நீங்கா துறினுமது.....
மருங்குடலை மிக்காக்கும் : வல்லுறுப்பை வீக்கும்,
கருங்குடலைக் கீழிறக்குங் காண்"

-பதார்த்த குண சிந்தாமணி.

பாலை : மணலும் மணல் சார்ந்த பகுதியும்.

முல்லை மற்றும் நெய்தல் நிலங்களில் வாத நோய்கள் பெருமளவில் ஏற்படும்.

ஏழு உடல் தாதுக்களின் ஆய்வு :

SL. No	UDAL KATTUKAL	INCREASED CONDITIONS	DECREASED CONDITIONS
1.	Saaram	Loss of appetite, excessive salivation	Tiredness, Laziness, Diminished activity of the sense organs.
2.	Senneer	Boils and tumours in different Parts of the body, Splenomegaly,	Tiredness, Lassitude, Anaemia
3.	Oon	Tumours or extra growth around the neck, face, abdomen, thigh, Genitalia etc.,	Muscle wasting
4.	Kozhuppu	Tumours or extra growth around the neck, face, abdomen, thigh, Genitalia etc., with dyspnoea	Pain
5.	Enbu	Strong bones and teeth	Weak bones, teeth, nails and hair.
6.	Moolai	Heaviness, swollen eyes, Swollen phalanges, oliguria	Osteoporosis and shrunken eyes
7.	Sukkilam or Suronitham	Increased sexual activity and signs identical to urinary calculi	Failure to reproduce, pain in genitalia

In Azhal keel vaayu,

Saaram, Kozhuppu, Oon and Enbu thathukkal are chiefly affected.

1. **Saaram** **:** Weakness, pain in knee joints
2. **Kozhuppu** : Morning stiffness occurs in affected knee joint
3. **Enbu** : Pain occurring in affected knee joints, crepitations Present.
4. **Oon** : Muscle wasting present

But generally **senneer** is also affected: Anemia is found.

MUKKUTRAM:

Human body is influenced by Mukkutrams (deranged three humours) i.e. Vatham, Pitham and kabam. They are responsible for normal physiological conditions of the body. Vatham is mainly responsible for proper loco-motor functions. Bones and joints are considered to be the main location of vatham.

In Azhal keel vaayu the vatha kutram is mainly affected followed by pitham and kabam. This produces the following signs and symptoms,

1. Deranged viyanan leads to pain and difficulty in movements.
2. Deranged Abanan leads to constipation.
3. Inflammatory changes of the joints, redness and warmth are developed due to deranged pitham.
4. Sathaga pitham gets affected hindering the loco motor functions.
5. Along with vatham, kabam is also deranged, Santhigam is affected and this leads to abnormality in joint movements.
6. Erosions of bone margin, increased secretion of synovial fluid are developed due to deranged kabam.

NAME	LOCATION	PHYSIOLOGICAL FUNCTIONS
Abanan	Lower abdomen and Extremities	Responsible for urination, defecation and parturition, menstruation, ejaculation of the sperm.
Viyanan	Heart	Responsible for movements of all parts of the body and sensation.
Samanan	Stomach	Responsible for proper digestion

NOI KANIPPU VIVATHAM (DIFFERENTIAL DIAGNOSIS):

Azhal keel vaayu is differentiated from the followings diseases:

1. **VALI KEEL VAAYU:**

"வலிக்குத்தல் வீக்கங்காணும் வாய்த்தொண்டை வறட்சி காய்ச்சல்
தலைவலி மார்துடிப்புத் தாங்கொணா வலி வீக்கந்தான்
நிலவு காங்கணுக் குறங்கு நீடு தோள் முழங்கைக் காற்காம்
மலக் குடற்கட்டு வேர்வை வாதக்கீல் வாயு விதாமே"

-சபாபதி கையேடு.

It is characterized by excruciating pain and swelling involving knee joints, hip joints, elbow joints, shoulder joints and associated with systemic disturbances like dryness of mouth, pyrexia, headache, palpitation, constipation and sweating. In advanced cases it may affect the heart and produce "Thamaraga vaayu".

2. IYA KEEL VAAYU:

"கருதருங் கபக்கில் வாயு கண்டிடின் உடலிளைக்கும்
உருமெலிவாக்குங் கொள்ளும் உண்டியைச் சுருக்கு மினபந்
தருதுயில் நீங்கு முட்டிற் றாங்கொணா வலுவையாக்கும்
இருமலே விக்கல் வாந்தி, சோபை பாண்டெழுப்பும் பாரே"

-சபாபதி கையேடு

It is characterized by severe pain in the joints associated with emaciation of the body, anorexia, insomnia, cough, hiccough, vomiting, anaemia and dropsy. The common sites are spinal cord, hip joints and knee joints.

3. VALI IYA KEEL VAAYU:

"அவையம் வாதக் கபக்கீல் வாயுவான் வலி மிகுந்தே
உயங்கு நீர் கோத்து கீல்கள் ஒரியின் தலைபோற் காணும்
நயங்கொள்ள முடக்கல் நீட்டல் நண்ணிடாமெய்யுங்காயும்,
மயக்குறு முறக்மின்னாம் மன்னிய நெரிக்கட்டாமே"

-சபாபதி கையேடு.

It is characterized by pain in the joints associated with effusions of joint fluid and swelling, restricted joint movements, pyrexia, fainting, insomnia, especially in knee joint asymmetrically, lymphadenopathy, generalized malaise, atrophy of the affected limb etc. The affected joint looks like "Fox's Head".

LINE OF TREATMENT

In Siddha system the main aim of the treatment is to cure Udar pini (due to Mukkutram) and Manapini (due to changes in Mukkunam). Treatment is not only for perfect healing but also for the prevention and rejuvenation.

It is essential to know the disease, the aetiology, the nature of the patient, severity of the illness, the seasons and the time of occurrence must be observed clearly.

Line of treatment is as follows:

1. Kaappu (Prevention)
2. Neekkam (Treatment)
3. Niraivu (Restoration)

Thiruvalluvar details the duty of the physicians, i.e. study the disease, study the cause, seek subsiding ways and do what is proper and effective.

KAAPU (Prevention):

The prevention methods for Azhal keel vaayu are as follows:

1. Control the body weight by diet and exercise.
2. Modify the nature of work which gives stress to a particular joint.

   e.g. - Avoid prolonged standing and long distance walking.
3. Avoid excess intake of sour, astringent and bitter tasted foods.

NEEKKAM (Treatment in Siddha):

The aim of Neekkam is based on

- To bring the deranged Thodams to normal equilibrium state.
- To treat the patient with internal medicine and external medicine.

First the deranged vatham has to be brought to its normal state by giving purgation. It is mentioned in the following verse,

" விரேசனத்தால் வாதம் தாழும் "

" வமனத்தால் பித்தம் தாழும் "

" நசிய அஞ்சனத்தால் கபம் தாழும்"

- To implement required complementary therapies according to severity of symptoms.

1. PURGATIVE:

In Azhal keel vaayu, vatha kuttram is deranged. So a purgative vellai ennai –15ml with hot water in early morning in empty stomach on the first day is given.

2. INTERNAL MEDICINE:

Amirtha Kandhi Kukkil Vallathy – 5 gm in three divided doses/day were given with palm jaggery after food.

3. EXTERNAL MEDICINE:

Ilagu Vida Mutti Thylam – External application.

4. COMPLEMENTARY THERAPIES: (துணை மருத்துவம்)

Apart from other department, Sirappu maruthuvam department gives equal importance to complementary therapies in Siddha system of medicine along with its internal and external medicines. There are enormous complementary therapies followed in Siddha system of medicine such as kattu, pattru, Nasiyam, Attai Vidal, Thokkanam, Ottradam, Varmam, Asanam, Vedhu etc.

The complementary therapies which are taken into account for this study are.

I. Ottradam (fomentation)
II. Kattu (Compress)
III. Varma thokkanam (Varmam massage)
IV. Thokkanam (General Massage)
V. Vedhu (Steam bath)
VI. Asanas.

I. OTTRADAM (fomentation):

Ottradam is the application of hot or cold packs or the substance so applied. There are various types of ottradam mentioned in the siddha literature. In this study 2 types are followed.

a. Hot fomentation by means of medicated pouches.
b. Hot fomentation by means of lemon directly.

a. By means of medicated pouches:

Medicated pouches are made up of pieces of leaves from either a single plant or different plants

The leaves are commonly taken from

- ✓ Calotropis gigantea (erukku).
- ✓ Vitex negunda (Nochi).
- ✓ Cardiospermum halicacabum (mudakaruthan).
- ✓ Nuna (Morinda citrifolia).
- ✓ Thaluthalai……etc...

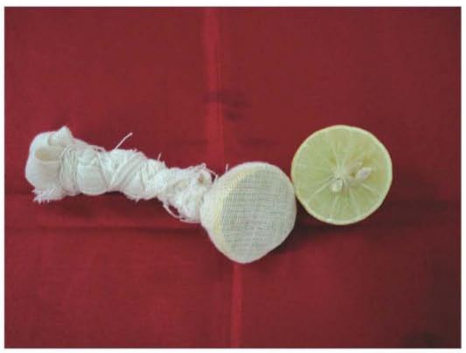
Benefits:

It reduces pain and swelling. Increases blood circulation. It generally corrects the deranged vatha kuttram in the affected joints.

ஒற்றடம் (Fomentation)

இலைக்கிழி ஒற்றடம்

எலுமிச்சை ஒற்றடம்



b.By means of lemon (elumichai ottradam):

Lemon fruit is made into two equal halves. Each piece is tied to small rope directly at the back side or wrapped by a thin piece of dressing gauze to hold the piece. It is dipped in the trial drug which is heated in the pan and gently applied on the affected joints.

Benefits:

It is usually indicated at the time when the knees are swelled.

II. KATTU - (compress or Bandage):

Kattu is the application of medicine made of botanicals(herbs), inorganic substances (Minerals and Pashanam) etc, to the affected area and bandaged.

Procedure followed in this study:

The fresh leaves of any one of the following plants like Vitex negunda (நொச்சி), Adathoda vasica (ஆடாதோடை), Tamarindus indica (புளி) are made into small pieces and it is sauted or mere mixed well with the external medicine and then it is spread in a piece of cotton which is wrapped along the affected joint and bandaged.

Benefits:

It is used in the condition of acute swelling and pain in osteoarthritis due to overuse of the knee joint.

கட்டு (COMPRESS)

III. VARMAM MASSAGE:

Varmam points:

Normally there are the points where two bones join or a muscle inserted into bone or the blood vessels, or where nerves are prominent. It can also be considered as reflex anatomical points directly related to organs lying within.

The therapy of physical manipulations either by applying pressure on the varmam points or using massage therapy with specific medicated oils or blowing certain medicines in the nose or ear is called as varmam treatment. Varmam points are rhythmically tuned by varmam therapists for managing various diseases like nerve disorders, arthritis, back pain, spinal problems etc. Varmam points to be manipulated for osteoarthritis are as follows:

1. **Mootu Varmam:**

   Location: Anterior surface of the knee joint.

2. **Sandhi Varmam**:

   Location: On either side of the Mootu Varmam

3. **Mozhi poruthu Varmam**:

   Location: Posterior surface of the patella

4. **Asaivu thiru kannu varmam**:

   Location: In the anterior surface, 2 finger breadth sidewards to the knee joint.

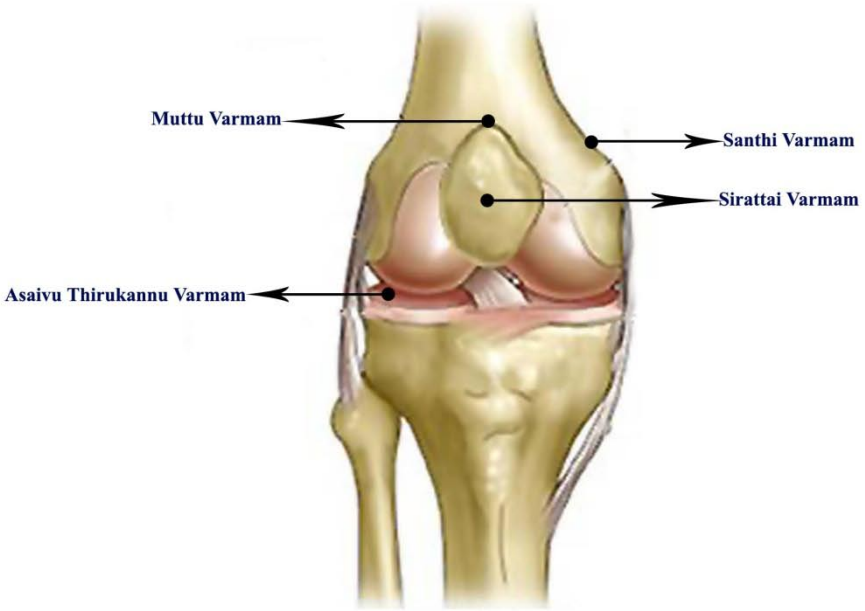
5. **Pathaippu varmam**:

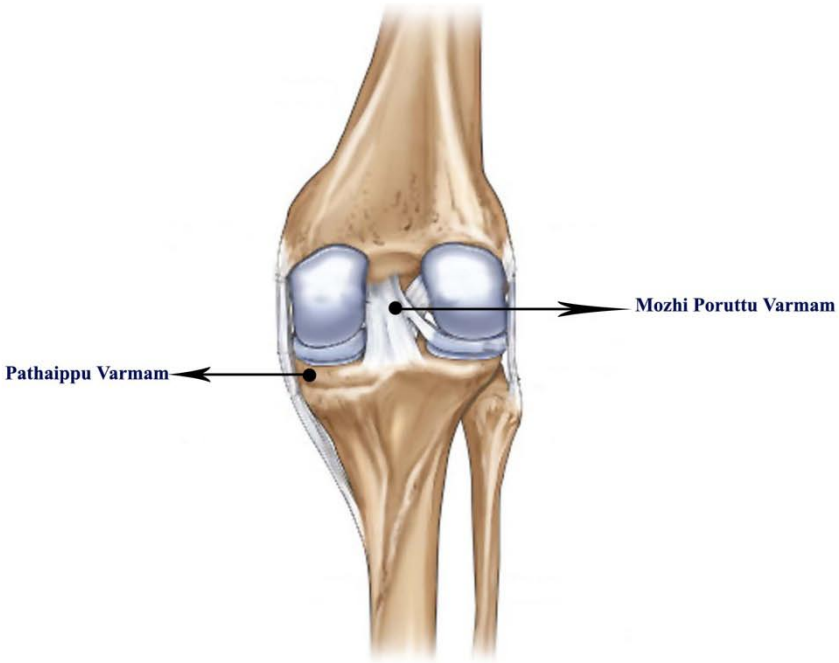
   Location: either side of the patella at the posterior surface

6. **Sirattai Varmam**:

   Location: Present at the patella bone.

VARMAM POINTS





VARMAM MASSAGE

Massage technique:

Generally these points are manipulated by doing pinching movements around the patella and also in the posterior aspect as quoted by Shanmugam aasan in his text books.

Benefits:

By doing these acute symptoms are greatly reduced.

IV. VEDHU: (Steam bath)

Vedhu includes both steam inhalation and steam application to either localized regions on the whole body below the neck region. Steam bath or warm decoction shower is done, by adding fresh herbs, aromatic substances or raw drug powders to boiling water.

The benefits of steam baths include

- Reducing tension
- Relaxation of muscle tissue
- Increasing joint flexibility
- Detoxification
- Increasing the circulation
- Stimulation of the immune system
- Revitalizing skin and enhancing skin tone

In this study steam bath is recommended for the patients who are obese, which is the main risk factor for osteoarthritis.

V. ASANAS:

Yogasanas are the well known procedures followed by our great siddhars for both preventing the body from degeneration and for curing and regenerate the body from ailments. Yogasana are followed as one of the important complementary therapy in the line of treatment for many diseases which are practiced worldwide now-a - days.

In this study the sequences of some simple asanas are practiced for the patients on considering the facts like weight bearing or advanced asanas are not advised for degeneration diseases and in modern science the exercises practiced for osteoarthritis mainly concentrates on strengthening the quadriceps muscle which spares the weight on knee joint.

The sequence of asanas from simple to advance followed by the patients is.

- Ukatasanam.
- Vrksasanam.
- Vajrasanam.
- Garudasanam.

Generally the asanas which increases the strength of quadriceps femoris muscles and increases the stability of knee joints are taken into account. Usually asasns are advised only after the relief of symptoms.

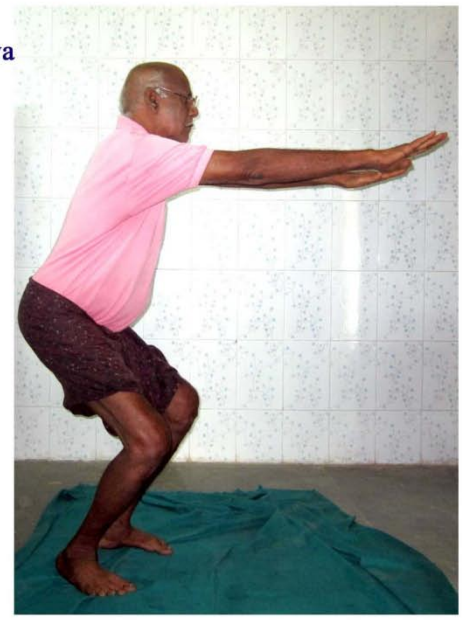
1. UKATASANAM(CHAIR POSE):

Procedure: Stretch your arms, lengthen the spine and bend your knees and move your trunk forward at 45 degrees.

Benefits: It usually strengthens the muscles of the legs particularly the quadriceps femoris.

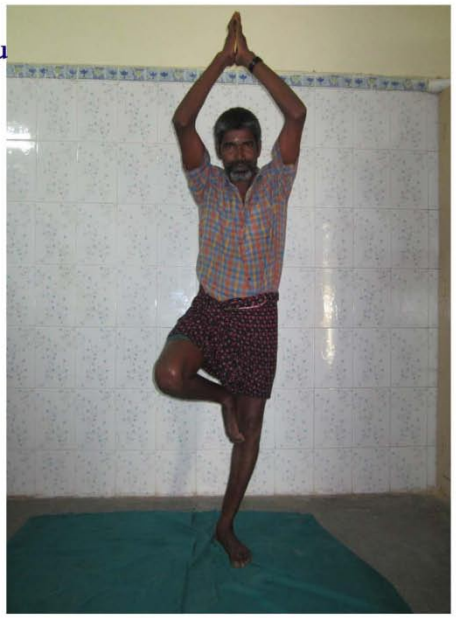
UKATASANAM

IP No : 2928
Name : Subbaiya
Age : 66/M



VRIKSHASANAM

IP No : 2936
Name : Kalimuthu
Age : 50/M



2. **VRITSHASANAM** (**Tree pose**):

Procedure: Stand erect with legs together and stretch your arms and fold your right leg at the knee and place the sole near the left hip joint. After maintaining it for some time, repeat on the other side.

Benefits: This pose strengthens the leg muscles and develops balance.

3. **VAJRASANAM** (**Diamond pose**):

Procedure: Fold both the knees, keep the joint with each other and sit on the pit formed by the heels, keep the spine, neck and head straight.

Benefits: This pose increases the flexibility of the knee joint and reduces the stiffness of the knee joint.

4. **GARUDASANAM** (**Eagle Pose**):

Procedure:

- From Ukatasanam shift your weight on to the left leg.
- Bend the right leg, lifting the foot from the floor and cross your right thigh over your left.
- Took the right foot around the left calf.
- Bring the arms out in front.
- Cross the left arm over the right and bring the palms to touch.
- Lift the elbows while keeping the shoulders sliding down the back.
- Hold 5-10 breaths.
- Repeat on the other side.

Benefits: Strengthens legs, improves balance and strengthens the shoulder.

VAJRASANAM

IP No : 2936
Name : Kalimuthu
Age : 50/M

Modern literatures

AZHAL KEEL VAAYU

MODERN ASPECT

ANATOMY OF THE KNEE JOINT

Introduction:

The knee joint is the largest joint in the body, consisting of 4 bones and an extensive network of ligaments and muscles. Injuries to the knee joint are amongst the most common in sporting activities and understanding the anatomy of the joint is fundamental in understanding any subsequent pathology.

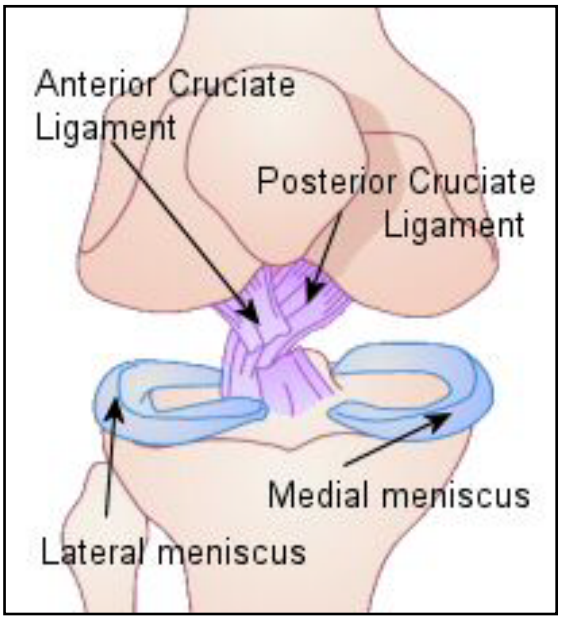
Bones of the knee joint:

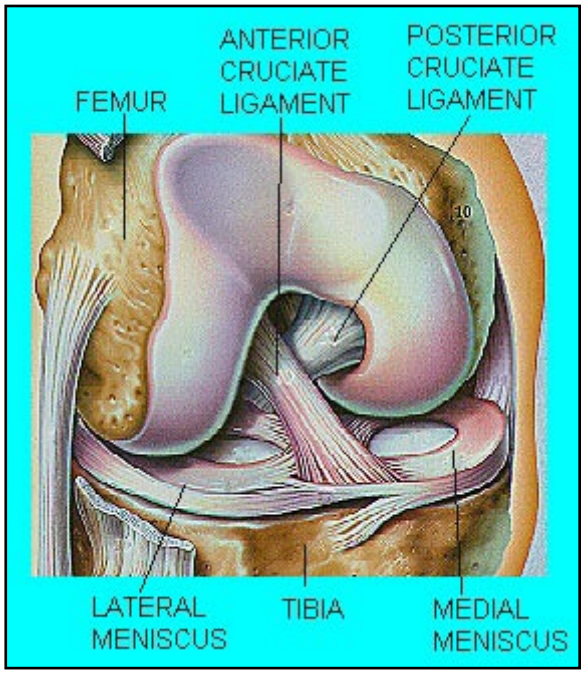
The knee is made up of four main bones. The femur (thigh bone), the tibia (shin bone), fibula (outer shin bone) and patella (knee cap). The main movements of the knee joint occur between the femur, patella and tibia. Each are covered in articular cartilage which is an extremely hard, smooth substance designed to decrease the frictional forces as movements occurs between the bones. The patella lies in an indentation at the lower end of the femur known as the intercondylar groove. At the outer surface of the tibia lies the fibula, a long thin bone that travels right down to the ankle joint.

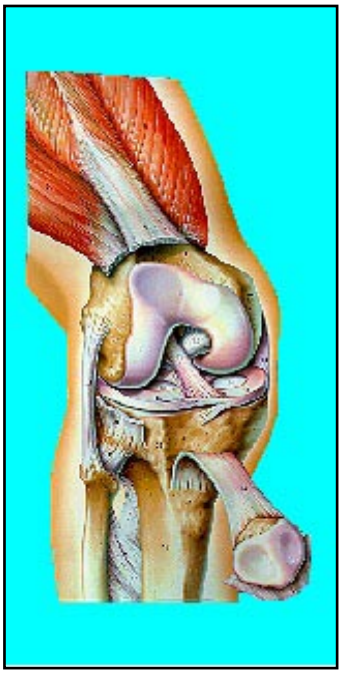
The knee joint capsule:

The joint capsule is a thick ligamentous structure that surrounds the entire knee. Inside this capsule is a specialized membrane known as the synovial membrane which provides nourishment to all the surrounding structures.

ANATOMY OF THE KNEE JOINT







Other structures include the infrapatellar fat pad and bursa which function as cushions to exterior forces on the knee. The capsule itself is strengthened by the surrounding ligaments.

Ligaments of the knee joint:

The stability of the knee owes greatly to the presence of its ligaments.

Each has a particular function in helping to maintain optimal knee stability in a variety of different positions. Knee joint is supported by various ligaments. They are

1.Fibrous capsule, 2.Ligamentum patellae, 3.Tibial collateral ligament, 4.Fibular collateral ligament, 5.Oblique popliteal ligament, 6.Arcuate popliteal ligament, 7.Anterior cruciate ligament, 8.Posterior cruciate ligament, 9.Medial meniscus, 10.Lateral meniscus, 11.Transverse ligament.

Bursae around the knee:

There are about 13 bursae around the knee.

I. Anterior - 4 bursae,
II. Lateral - 4 bursae,
III. Medial - 5 bursae.

Articular Cartilage:

The ends of the bones in a synovial joint are covered with a layer of articular cartilage. This is an avascular tissue that consists of cartilage cells (chondrocytes) embedded in a thick matrix of proteoglycans, water, type II collagen and smaller amount of other proteins.

Menisci (knee cartilage):

Each knee joints has two crescent- shaped cartilage menisci. These lie on the medial and lateral edges of the upper surface of the tibia bone. They are essential components, acting as shock absorbers for the knee as well as allowing for correct weight distribution between the tibia and the femur.

Muscle groups surrounding the knee joint:

The two main muscle groups of the knee joint are the quadriceps and the hamstrings. Both play a vital role, both moving and stabilizing the knee joint.

Quadriceps muscle:

The quadriceps muscle group is made up of four different individual muscles which join together forming the quadriceps tendon. This thick tendon connects the muscle to the patella which in turn connects to the tibia via the patellar tendon. Contraction of the quadriceps, pull the patella upwards and leads to knee extension.

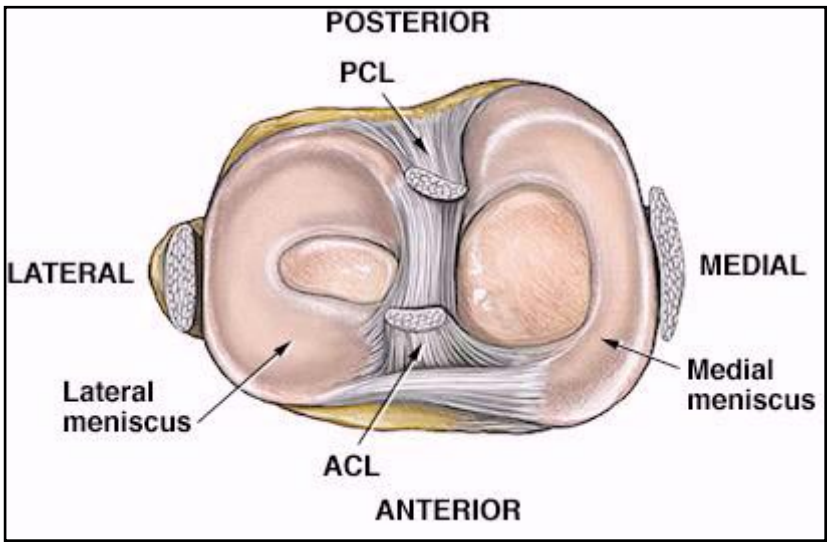
Hamstrings muscle:

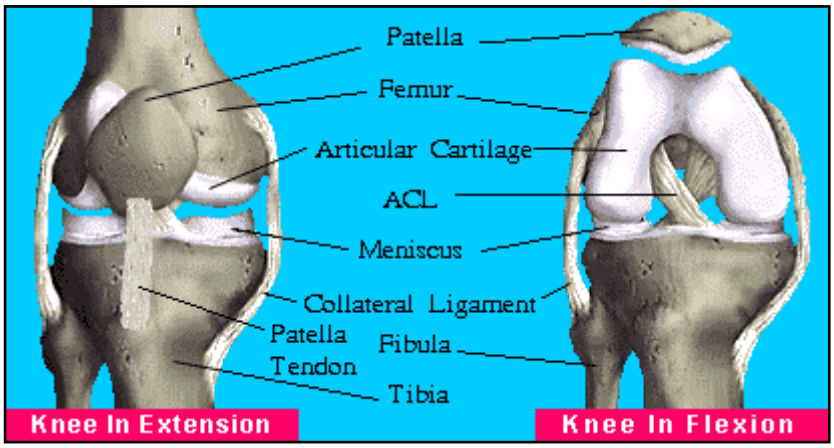
The Hamstrings muscle function in flexing the knee joint as well as providing stability on either side of the joint line.

Movements of knee joint:

Flexion, Extension, Medial rotation, Lateral Rotation.

RIGHT KNEE


POSTERIOR
PCL
LATERAL
MEDIAL
Lateral meniscus
Medial meniscus
ACL
ANTERIOR


Patella
Femur
Articular Cartilage
ACL
Meniscus
Collateral Ligament
Patella Tendon
Fibula
Tibia
Knee In Extension
Knee In Flexion

OSTEO ARTHRITIS

Introduction:

Osteoarthritis can be defined as a degenerative, non-inflammatory joint disease characterized by destruction of articular cartilage and formation of new bone at the joint surfaces and margins. However, it is a misnomer and the right term is Osteoarthrosis or degenerative joint disease.

EPIDEMIOLOGY:

The prevalence of Osteoarthritis rises progressively with age, such that by 65 years 80% of people have radiographic evidence of osteoarthritis, though only 25- 30 % are symptomatic. The knee and hip are the principal large joints involved; affecting 10- 25% of those aged over 65 years. Even for joints less frequently targeted by osteoarthritis, such as the elbow or ankle, osteoarthritis remains the most common cause of arthritis.

Osteoarthritis is a complex disorder with multiple risk factors. Twin and family studies show that genetic factors play a major role, particularly for hand and generalized Osteoarthritis, but also for hip and knee Osteoarthritis.

The knee Osteoarthritis is prevalent in all racial groups but hip, hand and generalized osteoarthritis are particularly prevalent in Caucasians.

Osteoarthritis is more prevalent and more commonly symptomatic in women, except at the hip where men are equally affected. Trauma is a recognized predisposing factor and repetitive adverse loading of joints during occupation or

competitive sports also appears important, such as in farmers (hip osteoarthritis) miners (knee osteoarthritis) and professional footballers (knee osteoarthritis).

CLASSIFICATIONS:

It could be divided into 2 types

1. Primary or idiopathic osteoarthritis.

2. Secondary osteoarthritis.

S.No	**PRIMARY OSTEOARTHRITIS**	**SECONDARY OSTEOARTHRITIS**
1.	Usually limited to one or a small number of joints.	May be limited to a small number of joints in injury related or may be in joints.
2.	No specific inflammatory or metabolic condition known to be associated with arthritis is present.	Condition that cause damage to cartilage are present, such as - Inherited disease of iron, calcium or copper storage such as hemochromatosis, Hyperparathyroidism or Wilson's disease. Neurologic disorder that result in the loss of nerve function. Congenital disease that cause an imbalance in the joints.
3.	No history of specific injury or trauma.	History of injury to joints, such as fractures and tears or history of trauma.

SITES:

Common sites of primary osteoarthritis:

- Apophyseal joint of the cervical spine.
- Thoraco lumbar spine.
- First carpometacarpal joint.
- Distal interphalangeal joint.
- Patella femoral joint.
- Tibio femoral joint.
- First metatarsophalangeal joint.

Intermediate sites:

- Acromio clavicular joint
- Hip joint

Uncommon sites:

- Shoulder joint
- Elbow joint
- Wrist joint
- Ankle joint

PATHOGENESIS:

NORMAL ARTICULAR CARTILAGE:

Normal cartilage has two main components. One is the extra cellular matrix, which is rich in collagens (mainly types II, IX and XI) and proteoglycans IX mainly aggrecan. Aggrecan is a central core protein bearing numerous

glycosaminoglycans chains of chondroitin sulphate and keratin sulphate, all capable of retaining water.

The second component consists of isolated chondrocytes, which lie in the matrix. The matrix component is responsible for the tensile strength and resistance to mechanical loading of the articular cartilage.

CHANGES OF NORMAL CARTILAGE TO AGING CARTILAGE:

Several structural and biochemical changes involving the non collagenous component of the matrix occur during aging. These changes alter biochemical properties of the cartilage that are essential for the distribution of forces in the weight bearing zone.

Glycosamino glycans are modified qualitatively; they become shorter as the cartilage ages. The concentration of type VI keratin sulphate increase during aging, to the determent of type IV keratin sulphate.

These quantitative and qualitative changes in proteoglycans reduce the capacity of the molecules to retain water. Thus aging cartilage contains less water, which alters the biochemical properties of the cartilage. Fissures that develop aging are due to mainly to stress fractures of the collagen network.

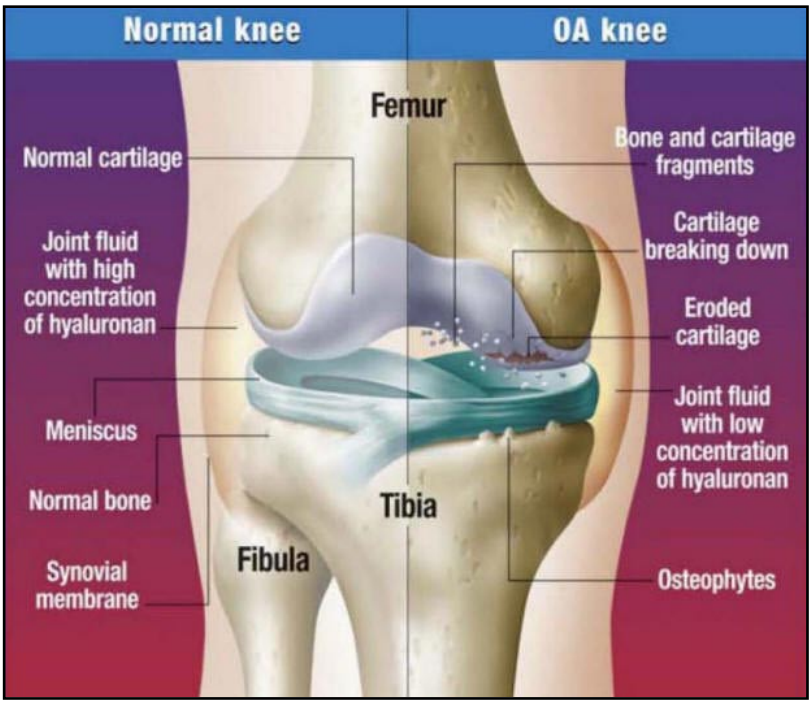
Articular Cartilage Changes:

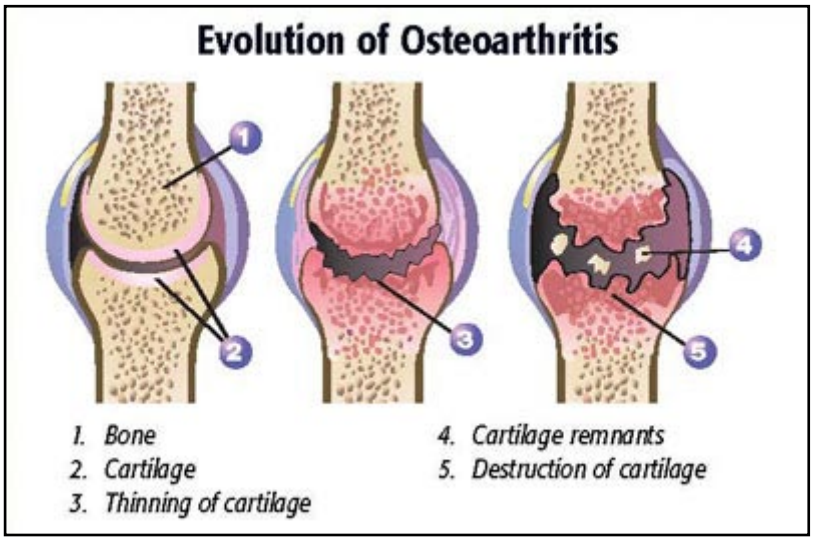
Many of the mechanisms responsible for progressive loss of cartilage in degenerative joint disease remain unknown, but the process can be divided into three over lapping stages as described under.

Stages in the development and Progression of Osteoarthritis

Stage I	**Cartilage Matrix Disruption or Alteration** : Disruption or alteration of the matrix macromolecular framework associated with an increase in water concentration may be caused by mechanical insults, degradation of matrix macromolecules, or alterations of chondrocyte metabolism. Initially, the type II collagen concentration remains unchanged, but the collagen meshwork may be damaged, and the concentration of aggrecan and the degree of proteoglycans aggregation decrease.
Stage II	**Chondrocyte Response to Matrix Disruption or Alteration**: When chondrocytes detect a disruption or alteration of their matrix they can respond by increasing matrix synthesis and degradation and by proliferating. Their response may restore the tissue, maintain the tissue in an altered state, or increase cartilage volume. They may sustain an increased level of activity for years.
Stage III	**Decline In the Chondrocyte Response:** Failure of the chondrocyte to response to restore or maintain the tissue leads to loss of articular cartilage accompanied or preceded by a decline in the chondrocytic response. The causes for the decline in chondrocytic response remain poorly understood, but it may be partially the result of mechanical damage to the tissue, with injury to chondrocytes and a down regulation of the chondrocyte response to anabolic cytokines.

OSTEOARTHRITIS





AETIOLOGY:

I. PRIMARY CAUSE OF OSTEOARTHRITIS:

Though exact cause is not known, the following factors are suspected to play an important role in the causation of primary osteoarthritis

1) Endocrine
2) Post Traumatic
3) Inflammatory joint disease
4) Metabolic
5) Congenital or developmental
6) Genetic
7) Neuropathic and others

1. ENDOCRINE:

People with Diabetes may be prone to osteoarthritis. Other endocrine problems also may promote development, including acromegaly, hypothyroidism, hyper parathyroidism and obesity.

2. POST TRAUMATIC:

Traumatic causes can be further divided into macro trauma or micro trauma. An example of macro trauma is an injury to the joint such as fracture causing the bones to line up improperly (mal alignment), lose of stability or damage to cartilage. Micro trauma may occur over time (chronically). An example of this would be repetitive movements or the overuse noted in several occupations.

3. INFLAMMATORY JOINT DISEASE:

This category would include infected joints, chronic gouty arthritis and rheumatoid disease.

4. METABOLIC:

Disease causing errors of metabolism may cause osteoarthritis. Examples include Paget's disease and Wilson's disease.

5. CONGENITAL OR DEVELOPMENTAL:

Abnormal anatomy such as unequal length of legs may be a cause of osteoarthritis.

6. GENETIC:

A genetic defect may promote breakdown of the protective architecture of cartilage. Examples include collagen disturbances such as Ehlers- Danlos Syndrome.

7. NEUROPATHIC:

Diseases such as Diabetes can cause nerve problems. The loss of sensation may affect how the body knows the position and condition of the joints or limbs. In other words, the body can't tell when it is injured.

8. OTHERS:

Nutritional problems may cause osteoarthritis.

II. SECONDARY CAUSES OF OSTEOARTHRITIS:

The causes for secondary osteoarthritis of the knee are as follows:

- Obesity
- Valgus and varus deformities of the knee.
- Intra – articular fractures of the knee, etc.
- Rheumatoid arthritis, infection, trauma, TB, etc.

- Hyper parathyroidism.
- Hemophilia.
- Syringomyelia
- Overuse of intra- articular steroid therapy.

It is generally observed that secondary osteoarthritis occurs in the younger age groups and is more severe than the primary. Apart from all the features of osteoarthritis, secondary osteoarthritis has the features of the corresponding aetiological condition.

SIGNS AND SYMPTOMS:

The most common signs and symptoms of osteoarthritis are;

- Predominant symptom is pain which decreases on walking. The pain is poorly localized and dull aching in nature.
- The patient complains of early morning stiffness which subsides over the day after activity.
- Morning stiffness, which usually lasts no more than 30 minutes.
- Swelling of the joints
- Minimal tenderness
- Restricted range of joint movements
- Coarse crepitus can be elicited

Examination of knee joint

Examination		Normal Person	Knee Osteoarthritis patient
Inspection	Skin Colour	Normal skin colour	Redness due to inflammation (if acute)
	Shininess	Absent	Present due to swelling
	Swelling	Absent	Present around the joint line.
	Deformity	Absent	Typical varus deformity may be present due to marked tibio-femoral osteoarthritis.
	Gait	Normal Gait	A jerky, asymmetric 'antalgic' gait due to pain.
	Muscle wasting	Absent	Quadriceps muscle wasting may be present.
Palpation	Warmthness	Absent	Present due to inflammation
	Effusion		
	a.Patellar tap test	Absent	Present
	b.Massage test	Negative	Positive in moderate size effusion
	Tenderness	Absent	Joint line or periarticular tenderness present (Tibio femoral joint line, patello femoral joint)
	Crepitations	Absent	Present due to rough articular surface.
	Bony enlargement	Absent	Osteophytes may be palpable.
	Nodules	Absent	Loose bodies may be felt.
	Measurements of muscle girth (10cm above the patella)	Normal	Quadriceps muscle wasting may be present.
	Movement		
	a. Extension	Normal	May be restricted
	b. Extensor lag	Absent	Present due to quadriceps muscle weakness
	c. Flexion (Measure the range of active flexion using a goniometer)	Normal range of movement (0-140 degrees)	Flexion deformity present (15-110 degrees)

Test to find ligamentum injuries:	Anterior Cruciate ligament injury a.Anterior drawer test b. Lachman's test	Negative	Positive if ACL injury present Positive if ACL injury present
	Posterior Cruciate Ligament injury Posterior drawer test	Negative	Positive if PCL injury present
	Meniscus tear McMurray's test	Negative	Positive if Meniscus tear present

DIAGNOSIS:

There is no single sign, symptom or test result that allows a definitive diagnosis of osteoarthritis. Instead the diagnosis is based on a consideration of several factors, including the presence of the characteristic signs and symptoms of osteoarthritis, physical examination and the results of laboratory tests and x-rays.

DIAGNOSTIC CRITERIA:

Formal criteria helpful for diagnosis of osteoarthritis in synovial joints:

- Age greater than 40 years.
- Pain and swelling in knee joint
- Morning stiffness lasting less than 30 minutes.
- Crackling sensation (crepitus) present in knee joint.
- Joint- line or periarticular tenderness.
- Bony swelling (Osteophytes) around joint margins.
- Restricted joint movements

Clinical variants:

Monoarticular and pauciarticular OA:

Underlying abnormality acetabular dysplasia, old Perthe's disease or slipped epiphysis, a previous fracture or damage to ligaments or menisci.

Polyarticular Osteoarthritis:

Pain, swelling and stiffness of the finger joints, the first carpometacarpal and big toe metatarsophalangeal joints or the knees and lumbar facet joints may be affected.

Long standing cases, osteophytes and soft tissue swelling produce a characteristic knobby appearance of the distal inter phalangeal joints (Heberden's node) and less often the proximal interphalangeal joints (Bouchard's nodes).

Endemic Osteoarthritis:

Osteoarthritis occasionally occurs as endemic disorder affecting entire communities. It may either due to some environmental factor peculiar to that region or to an underlying generalized dysplasia in a genetically isolated community.

DIFFERENTIAL DIAGNOSIS:

Avascular necrosis:

Idiopathic necrosis causes joint pain and local effusion. Early on the diagnosis is made by MRI. Once bone destruction occurs the X-ray changes can be mistaken for those of Osteoarthritis. The cardinal distinguishing features is that in osteonecrosis is the 'joint space' (articular cartilage) is preserved in face of progressive bone collapse and deformity.

Inflammatory Arthropathies:

Rheumatoid arthritis, Ankylosing spondylitis and Reiter's disease may start in one or two large joints. X-rays show a atrophic or erosive arthritis.

Polyarthritis of the fingers:

Polyarthritis Osteoarthritis may be confused with other disorders which affect the finger joints. 'Nodal Osteoarthritis ' affects predominantly the distal joints, "Rheumatoid Arthritis" the proximal joints and "Psoriatic arthritis" is a purely destructive arthropathy and there are no inter phalangeal nodes. Tophaceous gout may cause knobbly fingers, but the knobs are tophi, not osteophytes.

DISH: Diffuse Idiopathic Skeletal Hyperostosis

This is a fairly common disorder of middle aged people, characterized by bone proliferation at the ligament and tendon insertions around peripheral joints and the intervertebral discs. On X-ray examination the large bony spurs are easily mistaken for osteophytes.

DISH & osteoarthritis often appear together but DISH is not osteoarthritis, the bone spurs are symmetrically distributed especially along the pelvic apophyses and throughout the vertebral column. When DISH occurs by itself it is usually asymptomatic.

COMPLICATIONS OF OSTEOARTHRITIS:

The major complications of osteoarthritis of knee

- Joint deformities
- Subluxation
- Ankylosis
- Intra- articular loose bodies

Life style effects include

- Depression
- Anxiety
- Feelings of helplessness
- Limits on daily activities
- Job limitations
- Loss of everyday family joys and responsibilities.

Laboratory Findings:

Regarding osteoarthritis laboratory findings are not diagnostic. But, specific laboratory test to know underlying causes of secondary osteoarthritis.

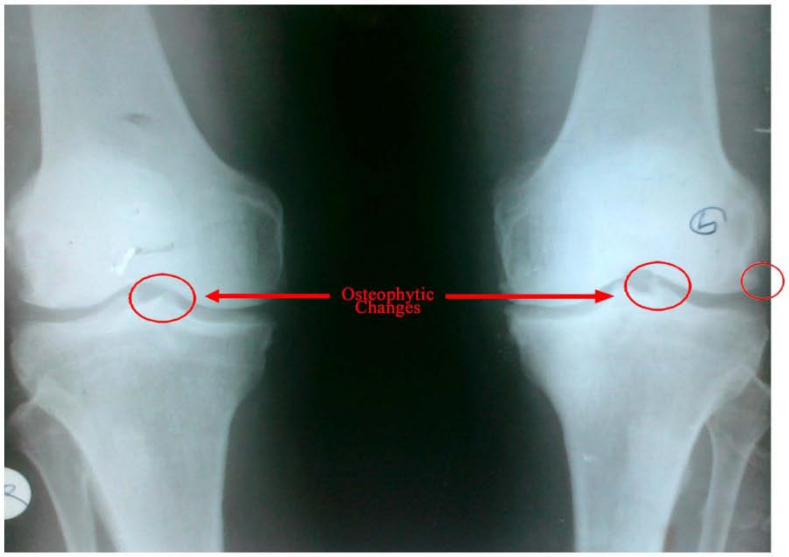
Radiographic features:

Characteristic finding:

- Asymmetric loss of cartilage (narrowing of joint space)
- Sclerosis of subchondral bone under the area of cartilage loss.
- Cyst close to articular surface
- Osteophytes at the margin of the joints
- Osteochondral loose bodies as intra articular bony fragments

OP No : 48469
Name : Dhurairaj Victor
Age : 69/M

IP No : 2273
Name : Laxmanan
Age : 58/M



Others:

- Old fracture which leads to osteoarthritis
- Evidence of congenital defects
- Chondrocalcinosis
- Later stage displacement of joints
- If severe, bone destruction

Radiological Classification of Osteoarthritis knee (Ahlbach) AP weight bearing and lateral Views.

- Type I - Joint space narrowing.
- Type II - Total loss of joint space
- Type III - < 5 mm tibial erosion but posterior part of the Plateau intact.
- Type IV - > 5 mm tibial and posterior plateau erosion.
- Type V - Subluxation Note: Grades IV and V: Total knee replacement is the line of treatment.

- **Radio isotope bone scans** shows discrete increased uptake in osteoarthritis joints due to bone remodeling.

Materials and methods

MATERIALS AND METHODS

This pilot study to evaluate the efficacy of Amirtha Kandhi Kukkil Vallathy (Internal medicine) and Ilagu Vida Mutti Thylam (external medicine) for Azhal Keel Vaayu (osteoarthritis) was carried out at post graduate department of sirappu maruthuvam , Government Siddha Medical College and hospital, Palayamkottai under the observation and guidance of the head of the department. In this study 20 cases were admitted in in-patient ward and the other 20 cases were seen in Out-patient ward.

Selection of cases:

Certain inclusive Criteria were followed for the selection of cases as follows.

- Sex- both male and female.
- Patents having symptoms of arthritis of Knee joints, swelling, stiffness, crepitations, restricted movements of knee joints.
- Patients who are willing to undergo radiological investigation and give blood for laboratory investigations.
- Patients willing to sign the informed consent stating that he/she will consciously stick to the treatment during 48 days.

Diagnosis of the cases:

Diagnosis was made by conducting all the necessary investigations in siddha and by thorough clinical examination and laboratory findings as per modern medicine methodology.

In siddha system the following aspect were taken into consideration:

1. Poriyal arithal
2. Pulanal arithal
3. Vinaathal
4. Examination of uyir thathukkal
5. Ennvagai thervugal
6. Udal thathukalin Nilaigal
7. Neerkuri, Neikuri.

The following Investigations were done in Modern medicine methodology:

Hematological Investigations:

a) Total WBC count

b) Differential WBC count

c) Erythrocyte sedimentation Rate

d) Hemoglobin percentage

e) Blood sugar

f) Blood urea

g) Serum cholesterol

Urine analysis:

a) Albumin

b) Sugar

c) Deposits

Stools examination

a) Ova

b) Cyst

Special Investigations

X-ray of the affected joint

Selection of drugs

Selection of drugs was made from the elaborate study of various siddha literatures and finally the drugs were selected from Agathiyar Vallathy 600 and siddha vaithiya thirattu.

The trial drugs selected are

I. Amirtha Kandhi Kukkil Vallathy as internal medicine and

II. Ilagu Vida Mutti Thylam as external medicine.

LINE OF TREATMENT:

The day before the internal medicine started, vellai-ennai was given at early morning for purgation to correct the deranged vatham to all the patients.

From the second day onwards the trial drugs are administrated.

1. **AMIRTHA KANDHI KUKKIL VALLATHY** as Internal medicine

5gm in three divided doses/day after food

2. **ILAGU VIDA MUTTI THYLAM** as external medicine

This oil was given only for external use on the affected joints.

All the patients were advised to maintain dietary regimen (or) pathiyam to avoid interaction with drug.

Some complementary therapies like ottradam, kattu, Varmam based massage and asanas (simple exercises) were manipulated.

CLINICAL ASSESSMENTS:

- The drugs were subjected to phytochemical and Pharmacological analysis.
- Required information was collected from each patient by using the forms mentioned in protocol.
- The clinical assessments for In- patients was made daily and recorded.
- The clinical assessments for out- patients were recorded regularly in each visit.
- A separate case sheet was maintained for each and every patient
- The laboratory investigation was done before and after treatment and recorded in the appropriate form.
- All the patients were screened for side effects and adverse effects.
- The outcome is assessed by the reduction of symptoms with the help of pain assessment scale.
- All the patients were advised for the further follow up.

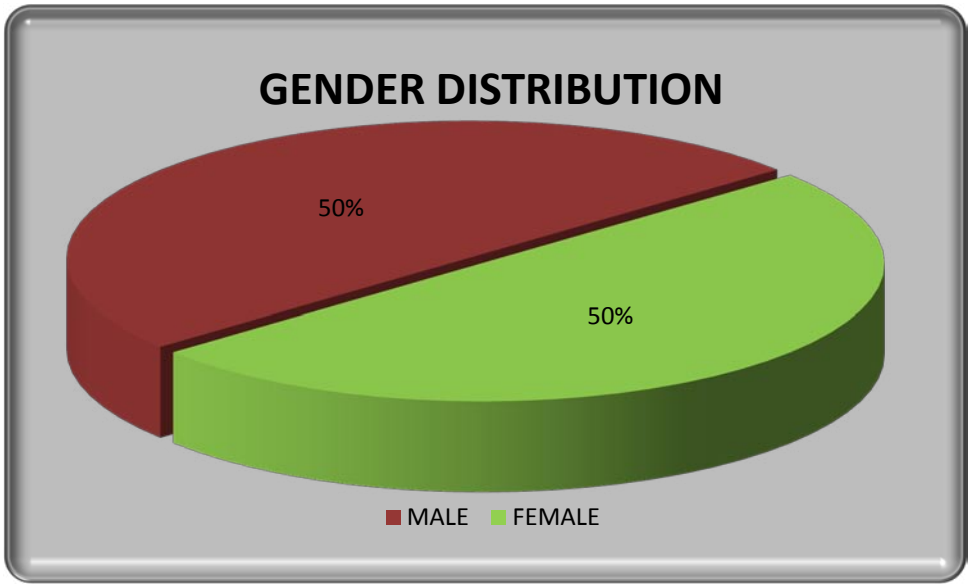
Results and observation

OBSERVATION AND RESULTS

1. Gender distribution
2. Age Distribution
3. Kaalam distribution
4. Occupational Status
5. Seasonal variations
6. Thinai
7. Socio-economic Status
8. Dietary Habits
9. Precipitating Factors
10. Mode of onset
11. Clinical features
12. Other Clinical features
13. Disturbances in Kanmenthirium
14. Disturbances in vatham
15. Disturbances in pitham
16. Disturbances in kabham
17. Udal Kattugal
18. Ennvagai Thervugal
19. Selection of patients
20. Assessments of results

1. GENDER DISTRIBUTION:

GENDER	NUMBER OF CASES	PERCENTAGE
Male	20	50
Female	20	50
Total	40	100

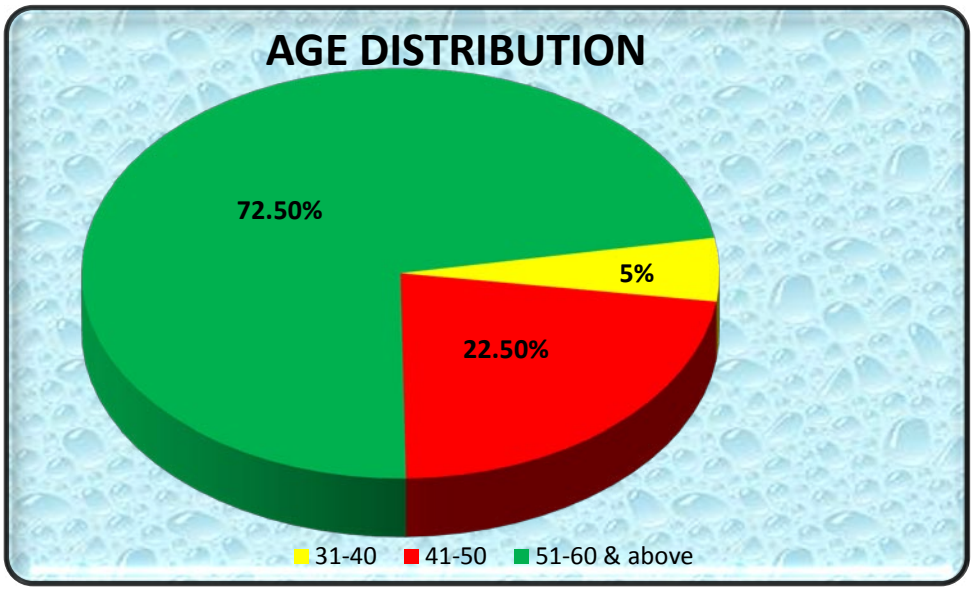


Inference:

Among the 40 patients selected for this study, 50% were males and 50% were females.

2. AGE DISTRIBUTION:

AGE (YEAR)	NUMBER OF CASES	PERCENTAGE
31-40	2	5
41-50	9	22.5
51-60 & above	29	72.5
TOTAL	40	100

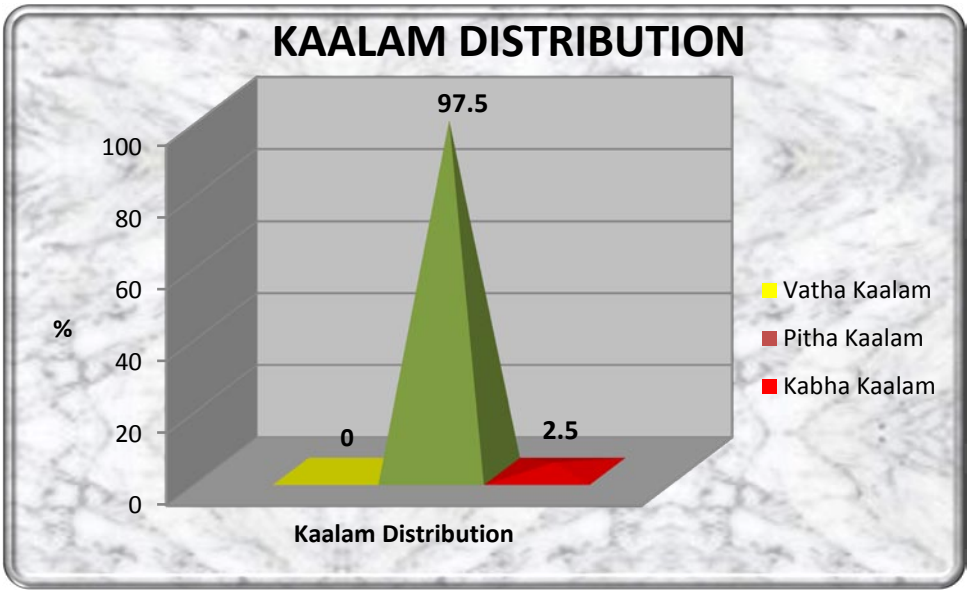


Inference:

The prevalence of the disease was found to be higher in the age group of 51-60 years and above.

3. KAALAM DISTRIBUTION:

KAALAM	NUMBER OF CASES	PERCENTAGE
Vatha Kaalam	0	0
Pitha Kaalam	39	97.5
Kabha Kaalam	1	2.5
Total	40	100

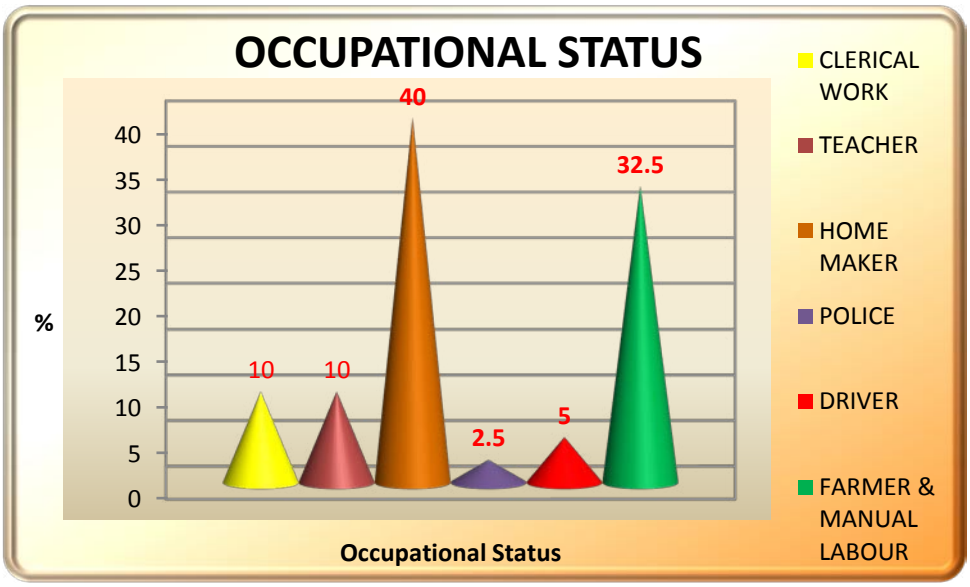


Inference:

Out of 40 cases, 97.5 % of the cases were found to be in Pitha kaalam, and the remaining 2.5% were found to be in kabha kaalam.

4. OCCUPATIONAL STATUS:

OCCUPATION	NUMBER OF CASES	PERCENTAGE
Clerical work	4	10
Teacher	4	10
Home maker	16	40
Police	1	2.5
Driver	2	5
Farmer & manual labour	13	32.5
Total	40	100

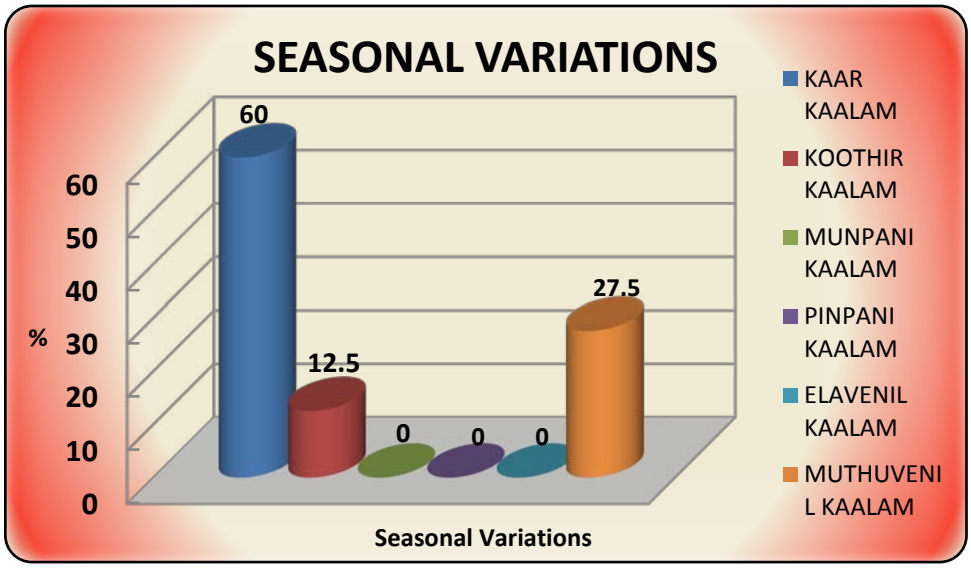


Inference:

Out of 40 cases, in this study the rate of incidence is higher in occupational group which includes home maker (40%) and farmer & manual labour (32.5%) groups.

5. SEASONAL VARIATIONS:

SEASONS	NUMBER OF CASES	PERCENTAGE
Kaar kaalam (Aug 16 – Oct 15)	24	60
Koothir kaalam (Oct 16 – Dec 15)	5	12.5
Munpani kaalam (Dec 16 – Feb15)	0	0
Pinpani kaalam (Feb 16 – Apr 15)	0	0
Elavenil kaalam (Apr 16 – June 15)	0	0
Muthuvenil kaalam (June 16 – Aug 15)	11	27.5
Total	40	100

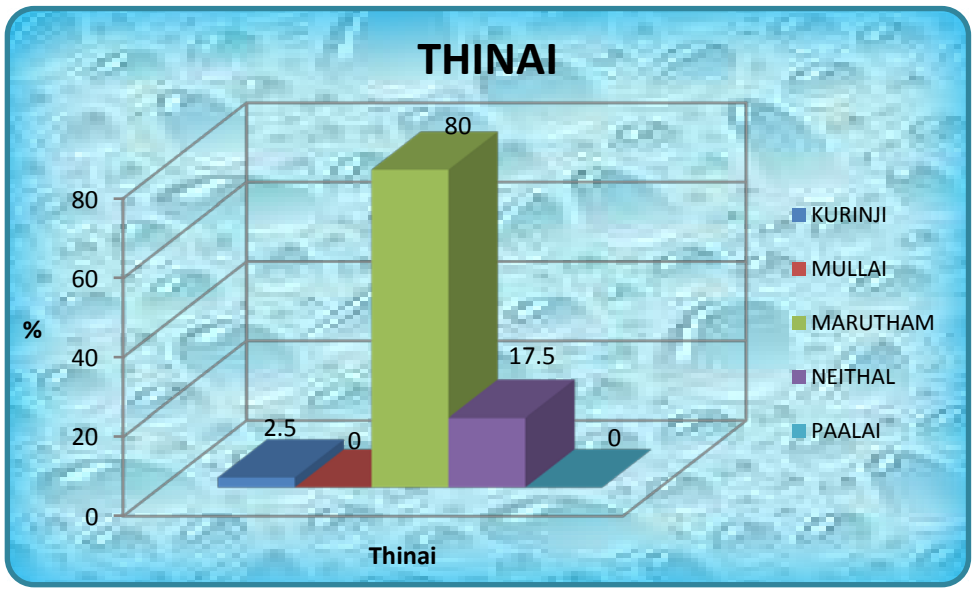


Inference:

Out of 40 cases, 24 patients (60%) were admitted in Kaar Kaalam, 5 patients (12.5%) were admitted in koothir kalam and 11 patients (27.5%) were admitted in Muthuvenil Kaalam.

6. THINAI:

THINAI	NO OF CASES	PERCENTAGE
Kurinji (Hill Area)	1	2.5
Mullai (Forest Area)	0	0
Marutham (Fertile Land)	32	80
Neithal (Coastal Area)	7	17.5
Paalai (Desert Land)	0	0
Total	40	100

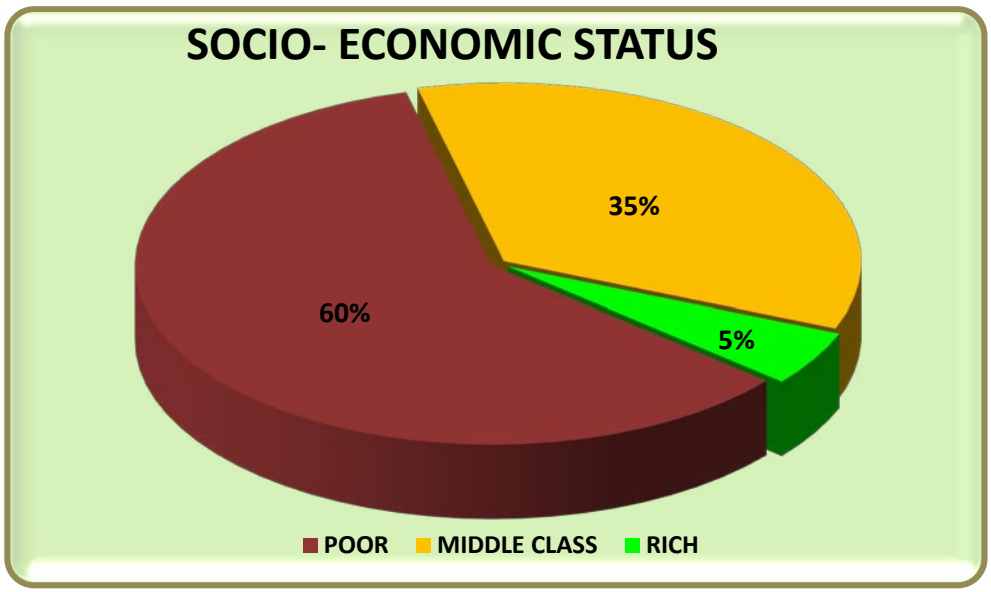


Inference:

Among the 40 patients, 1 patient (2.5 %) was from Kurinji, 32 (80%) cases were from Marutham and 7 (87.5 %) cases were from Neithal thinai.

7. SOCIO- ECONOMIC STATUS:

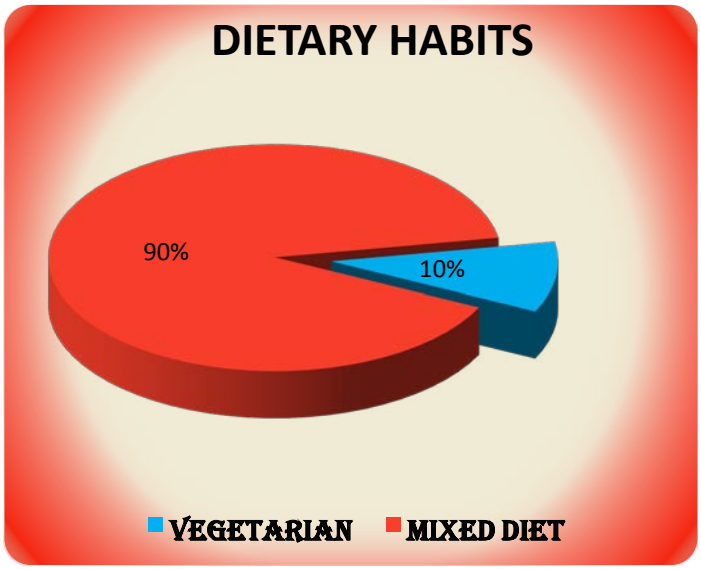
CLASS	NUMBER OF CASES	PERCENTAGE
Poor	24	60
Middle class	14	35
Rich	2	5
Total	40	100



Inference: Out of 40 cases 60% of cases were poor, 35% cases were from middle class and the remaining 5% were rich.

8. DIETARY HABITS

Dietary Habits	No of Cases	Percentage
Vegetarian	4	10
Mixed diet	36	90

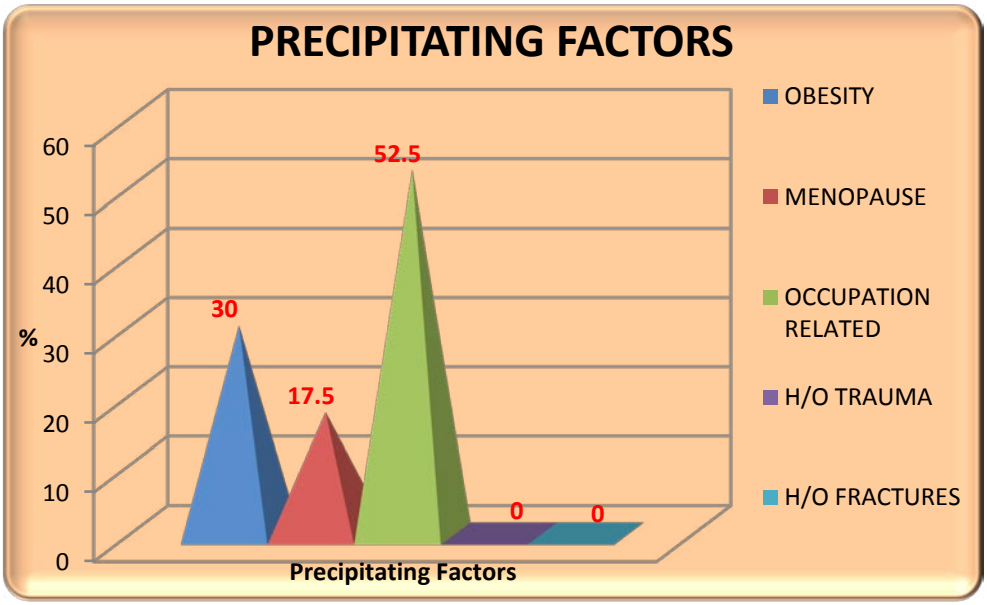


Observation:

All the cases except four were mixed diet.

9. PRECIPITATING FACTORS:

PRECIPITATING FACTORS	NO OF CASES	PERCENTAGE
Obesity	12	30
Menopause	7	17.5
Occupation related (over use of the joint)	21	52.5
H/o trauma	0	0
H/o fractures	0	0

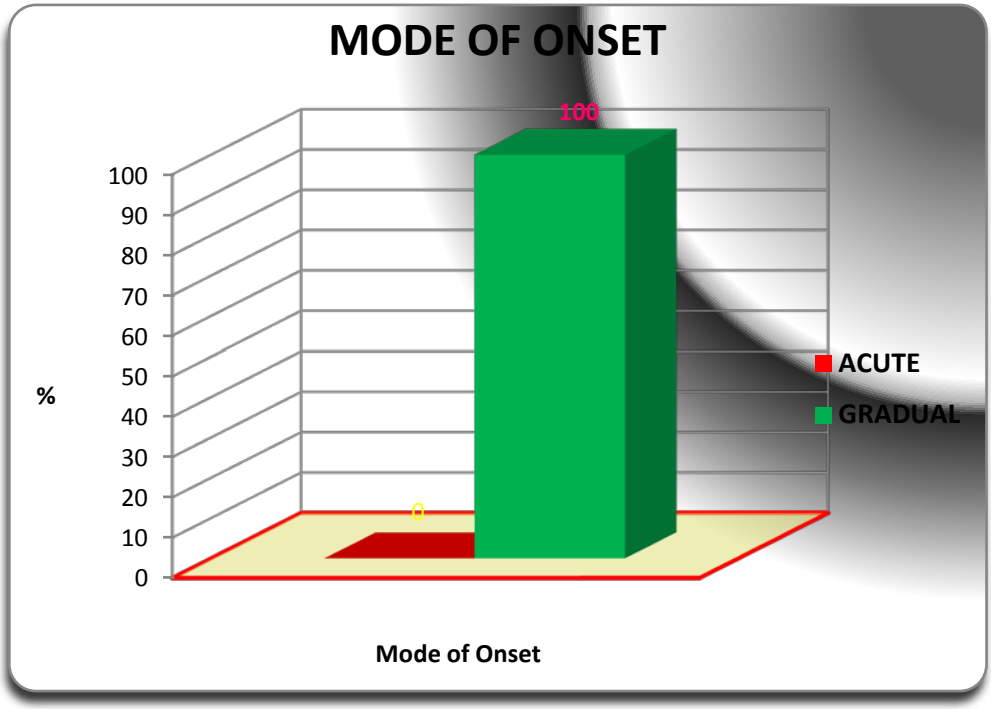


Inference:

Among the 40 patients, 21 of them (52.5%) were overweight, 12 of them (30%) had the history of over use of the joint and 7 (17.5 %) of them were in the post menopausal stage.

10.MODE OF ONSET:

MODE OF ONSET	NO. OF CASES	PERCENTAGE
Acute	0	0
Gradual	40	100

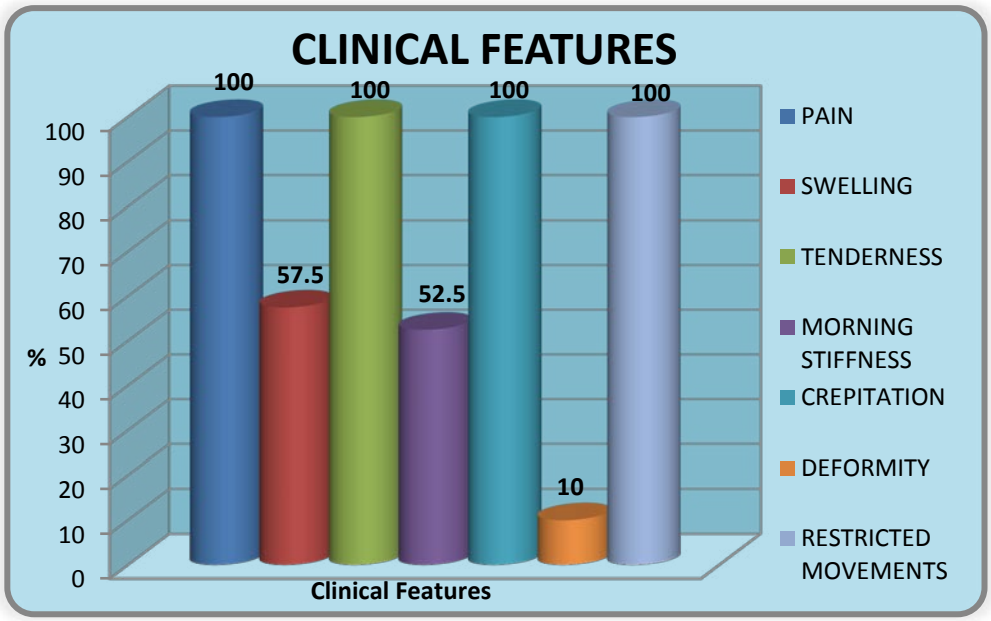


Inference:

According to this study 100% of cases were reported gradual onset of disease.

11. CLINICAL FEATURES:

CLINICAL FEATURES	NO. OF CASES	PERCENTAGE
Pain	40	100
Swelling	23	57.5
Tenderness	40	100
Morning stiffness	21	52.5
Crepitations	40	100
Deformity	4	10
Restricted movements	40	100

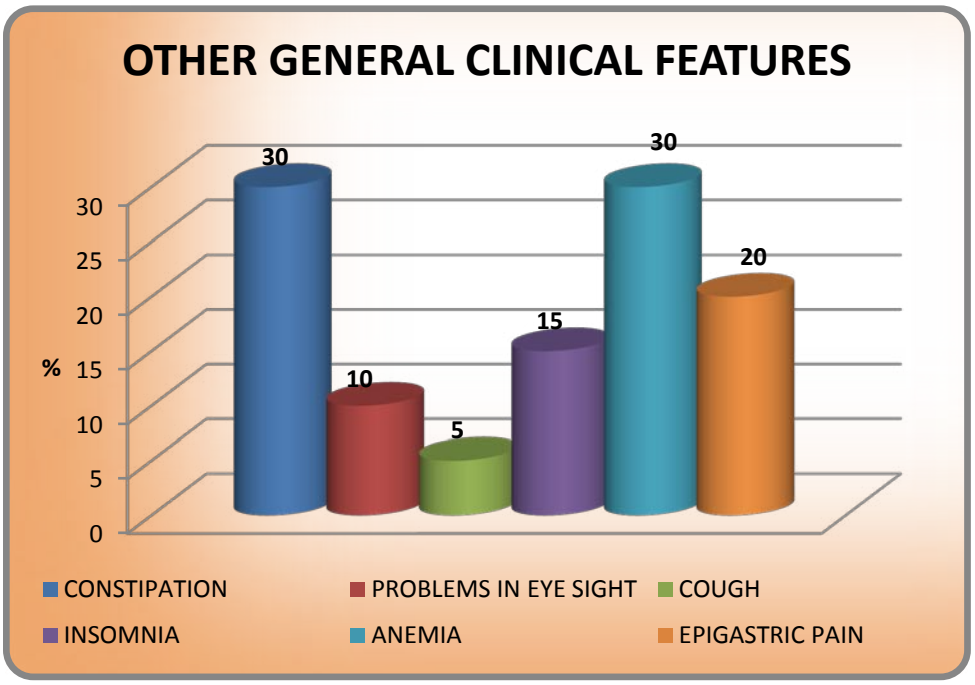


Inference:

Among the forty cases all of them had pain, tenderness, crepitations and restricted movements. 23 patients had swelling and 21 patients had morning stiffness.

12. OTHER GENERAL CLINICAL FEATURES:

CLINICAL FEATURES	NO. OF CASES	PERCENTAGE
CONSTIPATION	12	30
PROBLEMS IN EYE SIGHT	4	10
COUGH	2	5
INSOMNIA	6	15
ANEMIA	12	30
EPIGASTRIC PAIN	8	20

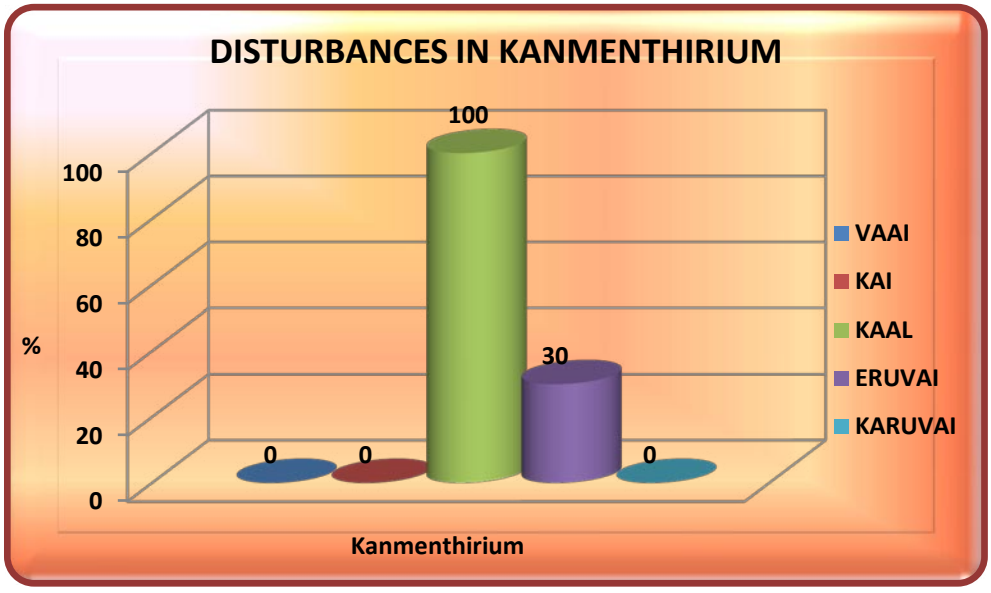


Inference:

Among 40 patients, 12 had constipation, 4 had problems in eye sight, 2 had cough, 6 had sleep disturbances, 8 had epigastric pain and 12 were anemic.

13. DISTURBANCES IN KANMENTHIRIUM:

KANMENTHIRIUM	NO. OF CASES	PERCENTAGE
Vaai	0	0
Kai	0	0
Kaal	40	100
Eruvai	12	30
Karuvai	0	0

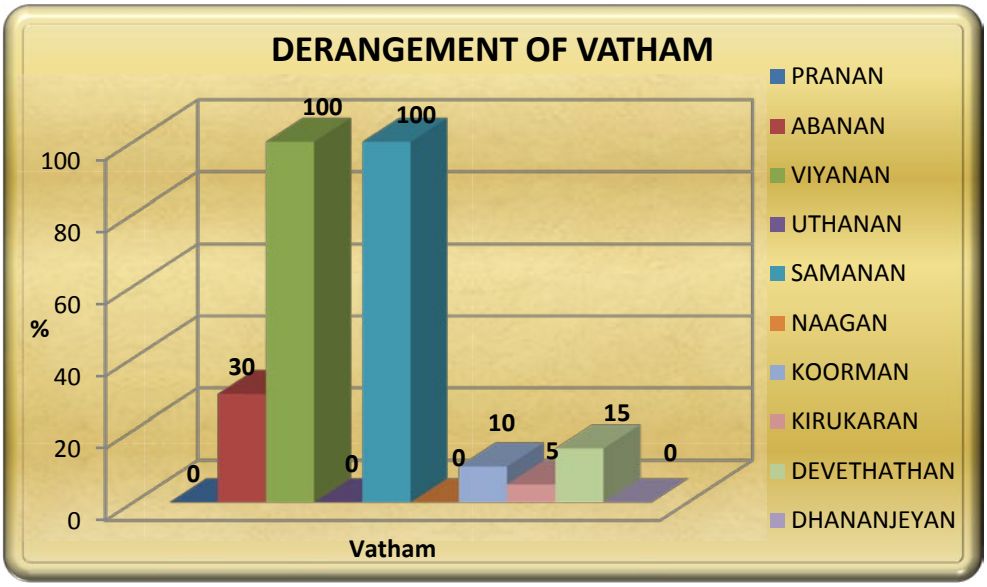


Inference:

Among the all kanmenthiriums (kai, kaal, vaai, eruvai, karuvai) Kaal was affected in all the 40 cases (100 %). And eruvai was affected in 12 cases(30%).

14. TABLE SHOWING THE DERANGEMENT OF VATHAM:

VATHAM	NO. OF CASES	PERCENTAGE
Pranan	0	0
Abanan	12	30
Viyanan	40	100
Udhanan	0	0
Samanan	40	100
Naagan	0	0
Koorman	4	10
Kirukaran	2	5
Devathathan	6	15
Dhananjeyan	0	0

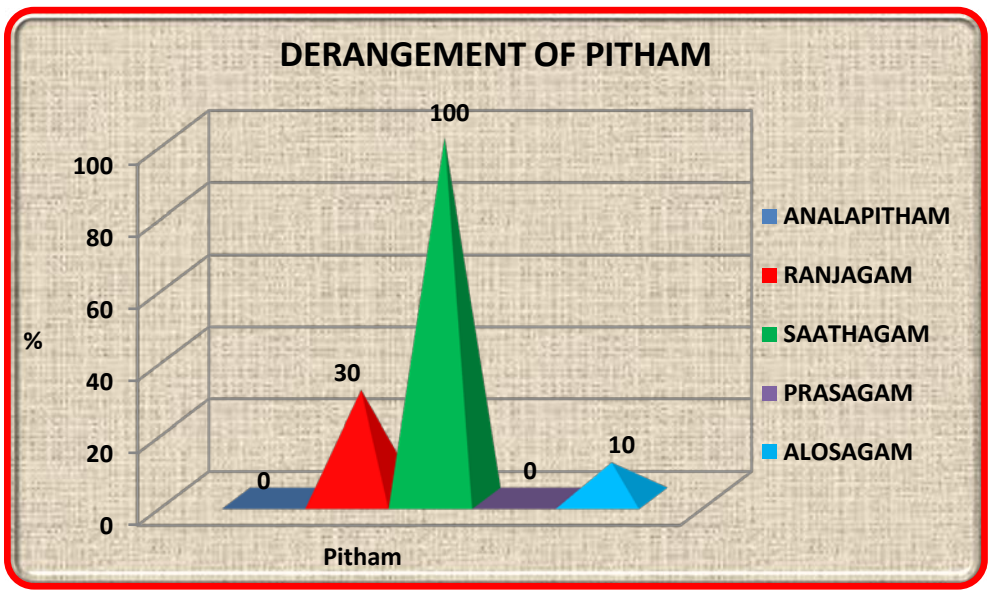


Inference:

Viyanan and Samanan were affected in all the 40 cases (100%), Abanan was affected in 12 cases (60%),Devathathan was affected in 6 cases (40%), Koorman was affected in 4 cases (10%) and kirukaran was affected in 2 cases(5%).

15. DISTUBRANCES IN PITHAM:

PITHAM	NO. OF CASES	PERCENTAGE
Analapitham	0	0
Ranjagam	12	30
Saathagam	40	100
Prasagam	0	0
Alosagam	4	10

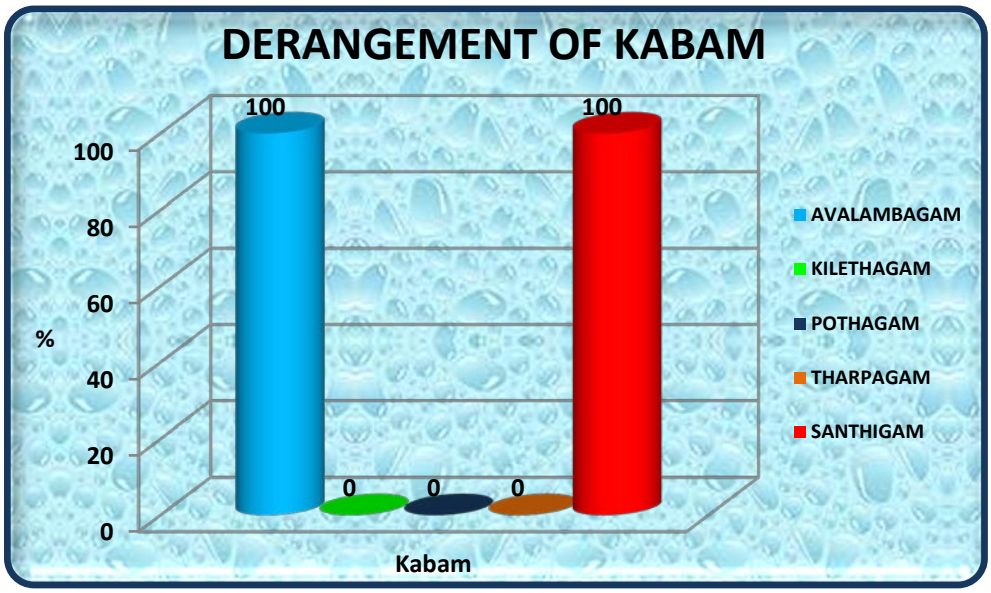


Inference:

Saathaga Pitham was affected in all 40 cases (100%), ranjaga pitham was affected in 12 cases (30%) and Alosagam was affected in 4 cases (10%).

16. TABLE SHOWING THE DERANGEMENT OF KABHAM:

KABHAM	NO. OF CASES	PERCENTAGE
Avalambagam	40	100
Kilethagam	0	0
Pothagam	0	0
Tharpagam	0	0
Santhigam	40	100

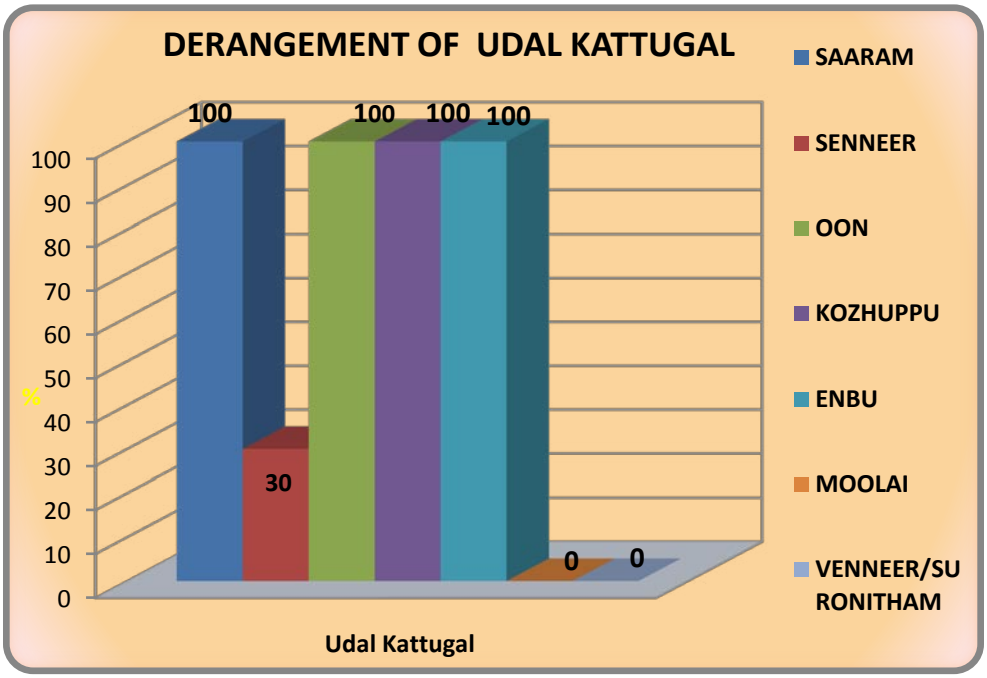


Inference:

In all the 40 cases (100%) Santhigam was affected and so Avalambagam was also affected.

17. TABLE SHOWING THE CONDITION OF UDAL KATTUGAL:

UDAL KATTUGAL	NO. OF CASES	PERCENTAGE
Saaram	40	100
Senneer	12	30
Oon	40	100
Kozhuppu	40	100
Enbu	40	100
Moolai	0	0
Venneer/suronitham	0	0



Inference:

In all the cases Saaram, Oon, Kozhuppu and Enbu were affected (100%) and Senneer was affected in 12cases (30%).

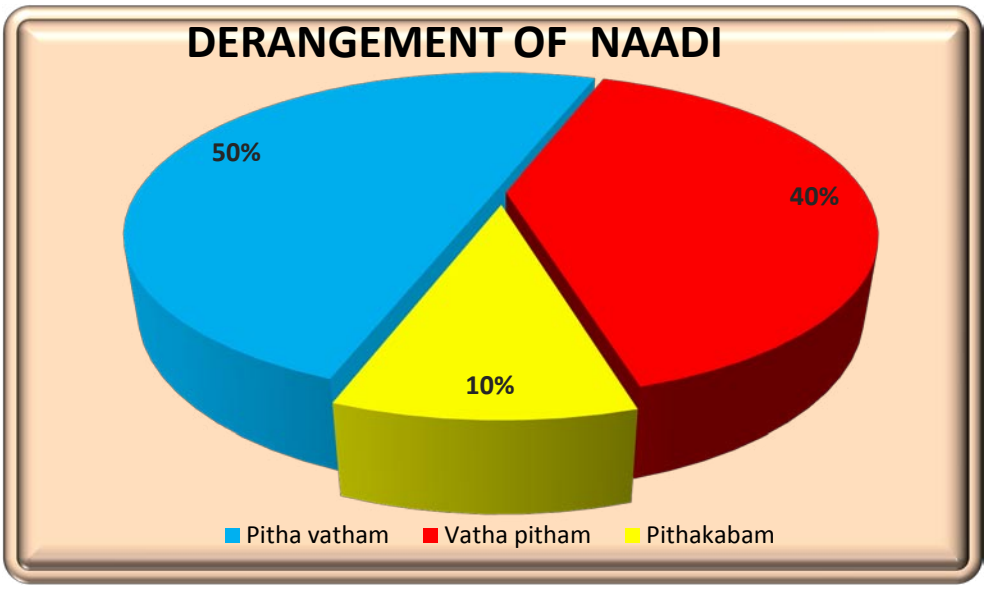
18. ENNVAGAI THERVUGAL:

ENNVAGAI THERVUGAL	NO. OF CASES	PERCENTAGE
Sparisam	40	100
Naa	12	30
Niram	0	0
Mozhi	0	0
Vizhi	4	10
Malam	12	30
Moothiram	0	0
Naadi	40	100

Naadi - Pitha Vatham 20 cases (50%)

Vatha Pitham 16 cases (40%)

Pitham Kabham 4 cases (10%)

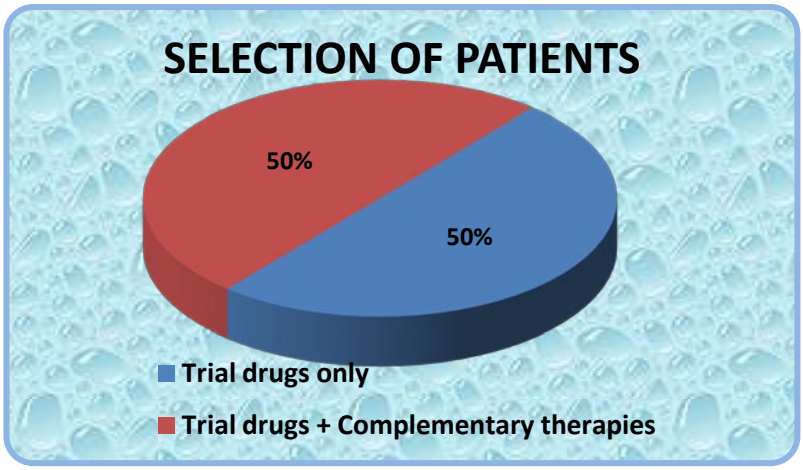


Inference:

Sparisam was affected in all the 40 cases, Naa was affected in 12 cases (30%), Malam was affected in 12 cases (30%) & vizhi was affected in 4 cases (10%).

19. SELECTION OF PATIENTS:

TREATMENT OPTIONS	NO OF PATIENTS
Trial drugs only	20
Trial drugs + Complementary therapies	20



Inference:

This Clinical study includes 40 Patients, i.e. 20 from IP ward and 20 Patients from OP ward, out of this 10 Patients from InPatient Department and 10 Patients from OutPatient Department were selected for treating with both trial drugs and complementary therapies, based upon their severity.

20. ASSESSMENT OF RESULTS:

OUTCOME ASSESSMENT SCALE:

Clinical efficacy of the trial drugs were assessed by the following scales

Universal pain assessment scale (Mccaffiry et al., 1993)

a) 0 No pain

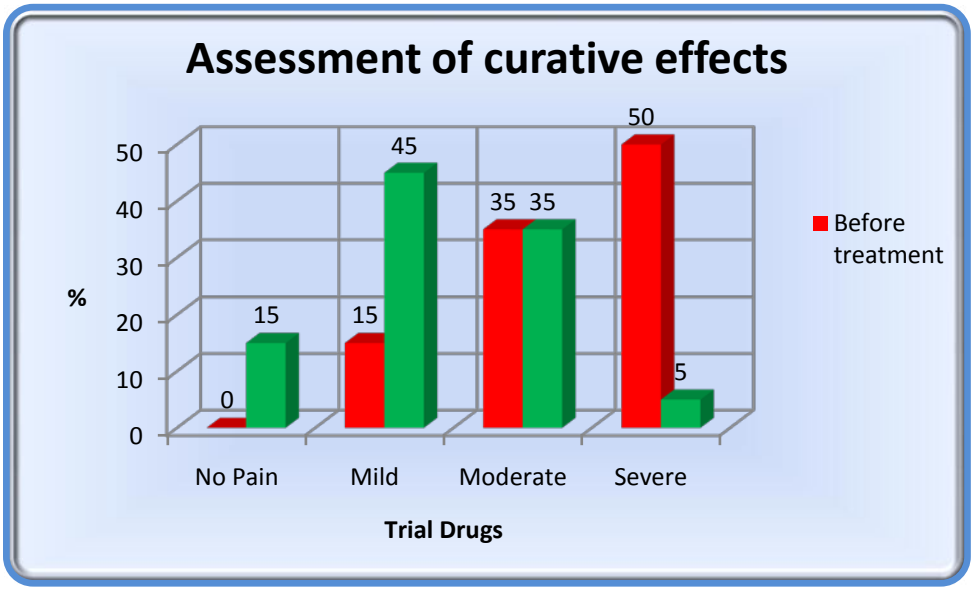
b) 1-3 Mild Pain

c) 4-6 Moderate Pain

d) 7-10 Severe Pain

A). ASSESSMENT OF CURATIVE EFFECTS IN KNEE OSTEOARTHRITIS PATIENTS TREATED ONLY WITH TRIAL DRUGS:

SYMPTOMS	INITIAL READINGS		FINAL READINGS	
	NO OF PATIENTS	PERCENTAGE	NO OF PATIENTS	PERCENTAGE
No Pain	0	0	3	15
Mild	3	15	9	45
Moderate	7	35	7	35
Severe	10	50	1	5



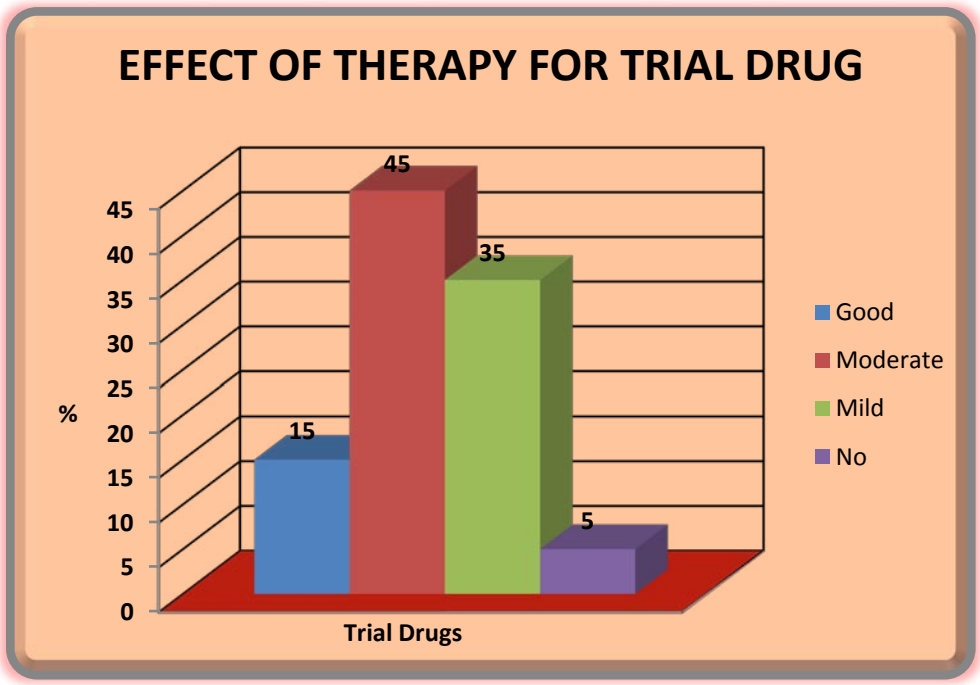
Inference:

Among the patients who were selected for treating alone with trial drugs, 10 of them had severe symptoms, 7 had moderate symptoms, and the remaining 3 patients had mild symptoms. But after treatment only 1 had severe symptoms, 7 had moderate symptoms, 9 had mild symptoms and 3 had no clinical manifestations.

B). EFFECT OF TRIAL DRUG ALONE:

Effect of therapy is assessed from the above tabulated data.

Effect of the Therapy	No. of Patients	Percentage
Good	3	15
Moderate	9	45
Mild	7	35
No	1	5

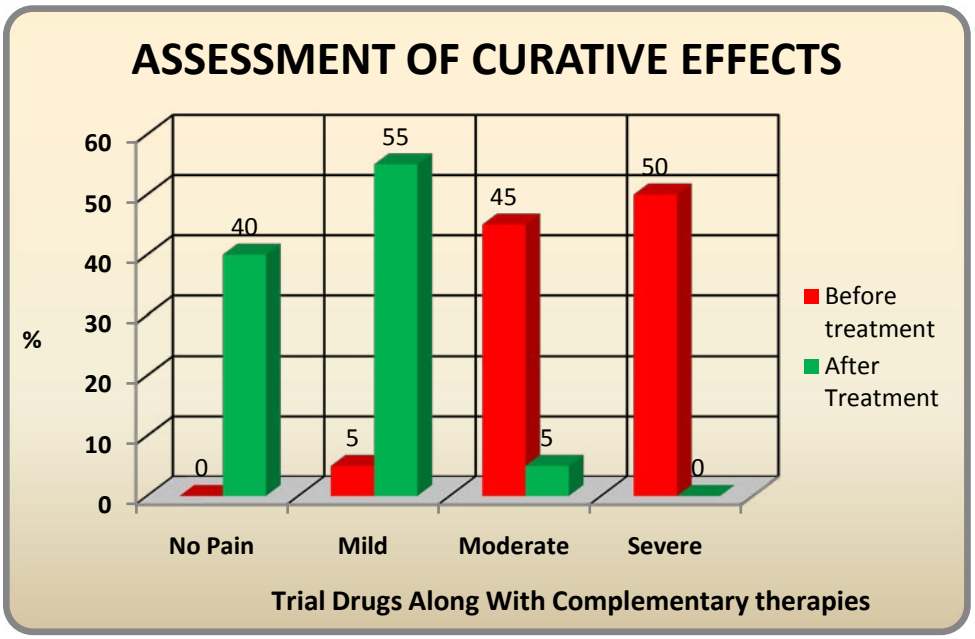


Inference:

By treating alone with trial drugs, 15% of patients had good improvement, 45% of patients had moderate improvement, 35% had mild improvement, and 5% had no improvement.

C). ASSESSMENT OF CURATIVE EFFECTS IN OSTEOARTHRITIS PATIENTS TREATED WITH TRIAL DRUGS ALONG WITH COMPLEMENTARY THERAPIES.

SYMPTOMS	INITIAL READINGS		FINAL READINGS	
	NO. OF PATIENTS	PERCENTAGE	NO. OF PATIENTS	PERCENTAGE
No Pain	0	0	8	40
Mild	1	5	11	55
Moderate	9	45	1	5
Severe	10	50	0	0

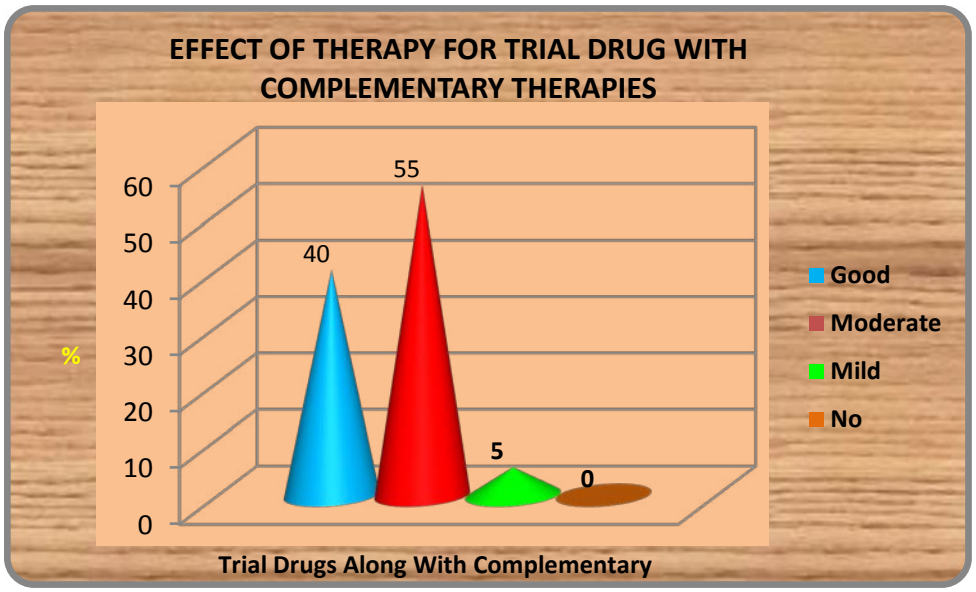


Inference:

Among the patients who were selected for treating both with trial drugs and complementary therapies, 10 of them had severe symptoms, 9 had moderate symptoms, and the remaining 1 patient had mild symptoms. But after treatment 8 had no clinical manifestations, 11 had only mild symptoms and the remaining 1 had moderate symptoms. No cases reported to have severe symptoms.

D). EFFECT OF TRIAL DRUG ALONG WITH COMPLEMENTARY THERAPIES:

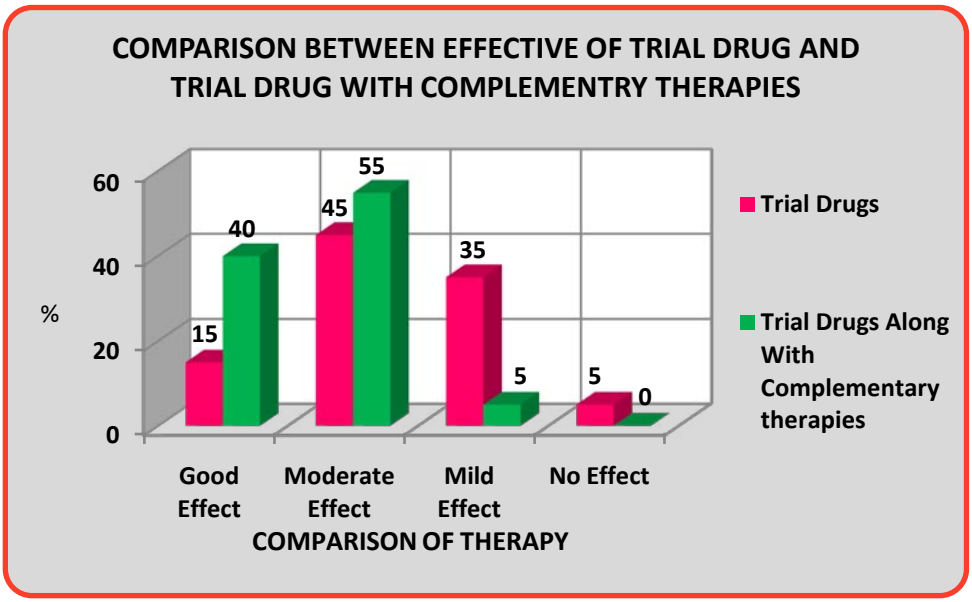
EFFECT OF THERAPY	NO. OF PATIENTS	PERCENTAGE
Good	8	40
Moderate	11	55
Mild	1	5
No	0	0



Inference:

By treating both with trial drugs and complementary therapies, 40% of patients had good improvement, 55% of patients had moderate improvement and 5 % only had mild improvement. None were reported to have nil prognosis.

E). COMPARISON BETWEEN EFFECTIVE OF TRIAL DRUG AND TRIAL DRUG WITH COMPLEMENTARY THERAPIES:



F). OVERALL RESULTS AFTER TREATMENT:

Based on outcome, effects after treatment was classified into 4 grades as

MARKED EFFECT:

No longer any clinical manifestations.

Patient could work and live normally.

No recurrence after some months.

MODERATE EFFECT:

Moderate reduction of manifestations.

Slight pain after movement.

MILD EFFECT:

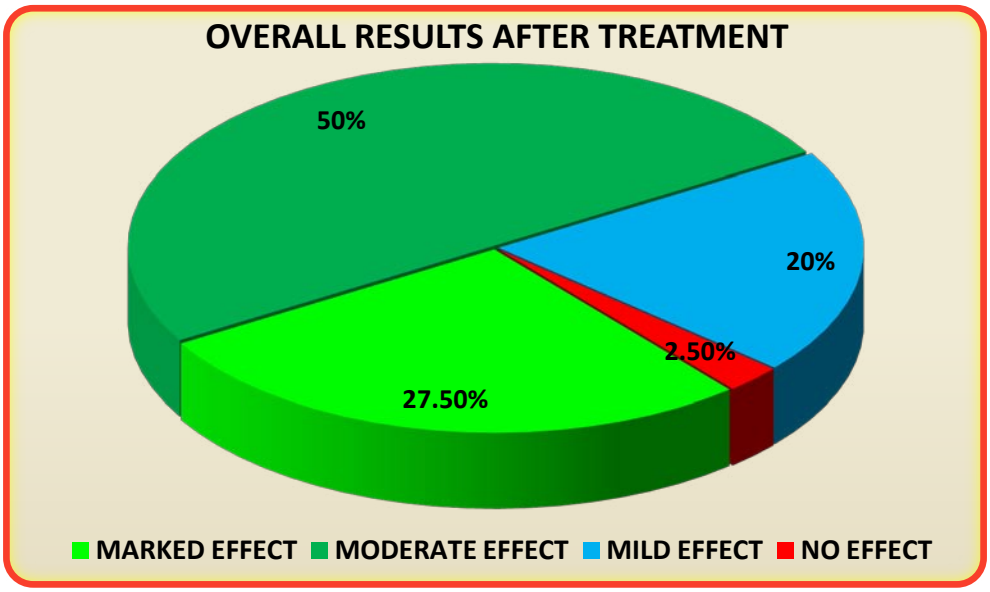
Slight reduction in the clinical manifestation.

With relapse.

NO EFFECT:

No reduction of pain and tenderness.

EFFECT OF THERAPY	NO. OF CASES	PERCENTAGE
Marked effect	11	27.5
Moderate effect	20	50
Mild effect	8	20
No effect	1	2.5



Inference:

Out of 40 cases, marked improvement was observed in 27.5 % patients, moderate improvement in 50 % patients, mild improvement in 20 % patients and no improvement was observed in 2.5 % patients.

OP AND IP CASES CLINICAL IMPROVEMENT

Sl. No	OP & IP NO	NAME	AGE	SEX	DOA	DOD	TREATED DAYS	RESULT
1	1731	MUTHUKUTTY	75	M	4.8.11	30.8.11	26	MILD
2	1722	VALLIAMMAL	65	F	4.8.11	3.9.11	30	MODERATE
3	43036	VEERAYYA	55	M	5.8.11	10.9.11	36	MODERATE
4	43053	SUBRAMANIAN	70	M	7.8.11	3.9.11	27	MILD
5	43676	SEETHALAKSHMI	35	F	8.8.11	5.9.11	28	MARKED
6	43662	RAMALAKSHMI	65	F	8.8.11	15.9.11	38	MODERATE
7	43843	SANKARAN	72	M	9.8.11	10.9.11	32	MILD
8	44381	VEERAPANDIYAN	57	M	11.8.11	20.9.11	40	MODERATE
9	1782	SERVARAN	45	M	11.8.11	9.9.11	29	MARKED
10	1813	LAKSHMI	60	F	15.8.11	15.9.11	31	MODERATE
11	1811	SHAMUVEL	65	M	15.8.11	18.9.11	34	MARKED
12	45073	SANGEETHA	49	F	16.8.11	24.9.11	39	MARKED
13	1831	SUNDARAM	73	M	17.8.11	13.9.11	27	MILD
14	1895	SHYMALADEVI	63	F	22.8.11	25.9.11	34	MODERATE
15	46911	JAYAKODI	65	F	25.8.11	4.10.11	40	MILD
16	47179	KADARMOIDHIN	72	M	26.8.11	24.9.11	29	MODERATE
17	1956	PECHIAMMAL	60	F	27.8.11	3.10.11	37	MODERATE
18	47670	MUTHAMMAL	63	F	29.8.11	30.9.11	32	MODERATE
19	48469	DHURAIRAJ VICTOR	69	M	2.9.11	30.9.11	28	MARKED
20	2008	SHANTHY	48	F	2.9.11	7.10.11	35	MARKED

OP AND IP CASES CLINICAL IMPROVEMENT

Sl. No	OP & IP NO	NAME	AGE	SEX	DOA	DOD	TREATED DAYS	RESULT
21	49412	CHELLAMMAL	70	F	7.9.11	10.10.11	33	MILD
22	49414	PARVATHY	68	F	7.9.11	6.10.11	29	MODERATE
23	50023	SHANMUGAVELU	60	M	10.9.11	20.10.11	40	MODERATE
24	50064	PERIAMMAL	53	F	10.9.11	10.10.11	30	MODERATE
25	51334	PAZHAVESAM	39	M	15.9.11	22.10.11	37	MARKED
26	2169	RAMALAKSHMI	59	F	16.9.11	20.10.11	34	MODERATE
27	51590	MAGALINGAM	46	M	17.9.11	22.10.11	35	MARKED
28	51659	SUBRAMANIYAN	61	M	17.9.11	27.10.11	40	NO EFFECT
29	52421	INDRA	41	F	21.9.11	21.10.11	30	MARKED
30	53206	DHINAKARAN	48	M	24.9.11	30.10.11	36	MARKED
31	2273	LAXMANAN	58	M	24.9.11	1.11.11	38	MODERATE
32	2310	CHELLAVADIVU	58	F	28.9.11	28.10.11	30	MODERATE
33	2358	NARAYANAN	57	M	3.10.11	5.11.11	33	MODERATE
34	56342	PUSHPAM	70	F	10.10.11	18.11.11	39	MILD
35	2551	KAMACHI	63	F	15.10.11	20.11.11	35	MODERATE
36	2651	PERIYASAMY	77	M	22.10.11	30.11.11	39	MILD
37	2869	SELVI	43	F	7.11.11	7.12.11	30	MARKED
38	2878	LAKSHMI	50	F	11.11.11	21.12.11	40	MODERATE
39	2928	SUBBAIYA	66	M	16.11.11	15.12.11	29	MODERATE
40	2936	KAMACHI	50	F	16.11.11	20.12.11	34	MODERATE

BLOOD INVESTIGATIONS BEFORE AND AFTER TREATMENT- OP & IP PATIENTS

S. NO	0P. NO	TC		DC								ESR		Bl.Sugar				Bl.Urea		Se. Cr	
				N		L		E		M		BT	AT	F		PP		BT	AT	BT	AT
		BT	AT	BT	AT	BT	AT	BT	AT	BT	AT			BT	AT	BT	AT				
1.	1731	7900	8000	51	51	44	44	3	4	2	1	40/84	8/16	77	98	124	135	20	21	0.6	0.7
2.	1722	7800	7900	53	55	42	42	5	3	-	-	10/20	4/8	77	80	86	112	21	24	0.7	0.5
3.	43036	9000	9100	59	60	34	35	7	5	-	-	3/6	3/6	95	95	110	130	21	29	0.5	0.4
4.	43475	7400	7500	59	59	40	40	1	1	-	-	24/52	8/16	90	78	117	120	32	26	0.9	0.6
5.	43676	8200	8800	65	70	32	27	3	3	-	-	10/22	8/16	101	110	88	110	28	35	0.6	0.9
6.	43662	8900	9500	68	70	30	28	2	2	-	-	4/9	2/4	95	102	98	125	21	29	0.8	0.7
7.	43843	8900	10000	67	69	30	30	3	1	-	-	2/5	2/4	84	94	82	124	24	36	0.6	0.5
8.	44381	8000	8100	62	60	32	34	4	4	2	2	10/20	4/8	83	89	97	120	20	27	0.8	0.6
9.	1782	8000	8100	59	58	40	41	1	1	-	-	24/48	8/16	75	90	110	120	33	28	0.8	0.6
10.	1813	7900	8100	58	60	37	38	3	1	2	1	6/12	4/8	72	80	96	100	15	17	0.6	0.6
11.	1811	6900	6900	49	49	48	48	3	3	-	-	20/40	4/8	65	99	144	115	24	23	0.7	0.6
12.	45073	7800	7800	60	61	38	37	2	1	-	-	8/16	4/8	74	80	100	128	17	20	0.6	0.5
13.	1831	8300	8300	58	59	40	39	2	1	-	-	10/20	4/8	85	90	110	115	40	36	0.9	0.7
14.	1895	8300	8300	66	68	30	30	4	2	-	-	6/12	4/8	92	95	105	113	31	28	0.8	0.6
15.	46911	7500	8500	56	60	42	38	4	2	-	-	4/9	1/5	73	88	88	105	26	26	0.5	0.8
16.	47179	7600	9000	68	70	30	28	2	2	-	-	8/15	4/10	85	98	95	110	30	34	0.6	0.6
17.	1956	9500	10500	63	60	27	35	10	5	-	-	2/4	1/3	120	110	110	130	25	25	0.9	0.8
18.	47670	8900	9800	53	55	39	38	8	7	-	-	2/4	1/5	131	120	79	109	30	19	0.4	0.4
19.	48469	7600	7700	49	48	47	48	4	4	-	-	20/40	8/16	83	88	116	120	29	24	0.8	0.7
20.	2008	7600	7800	54	60	44	38	2	2	-	-	6/12	4/8	77	80	102	115	21	20	0.7	0.8

BLOOD INVESTIGATIONS BEFORE AND AFTER TREATMENT – OP & IP PATIENTS

S. NO	IP. NO	TC		DC								ESR		Bl. Sugar				Bl. Urea		Se. Cr	
				N		L		E		M				F		PP					
		BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
21.	49412	8000	8500	68	70	30	28	2	2	-	-	7/10	5/12	85	90	138	140	25	30	0.6	0.4
22.	49414	8700	9000	58	60	40	40	2	-	-	-	15/30	10/22	87	95	88	110	18	28	0.5	0.9
23.	50023	8700	9500	66	69	30	30	4	1	-	-	8/20	8/18	95	95	98	120	22	20	0.7	0.7
24.	50064	8900	9500	60	60	38	39	2	1	-	-	8/16	6/15	90	102	79	98	34	36	0.8	0.8
25.	51334	9100	10200	57	57	40	39	3	4	-	-	5/12	3/18	82	88	110	135	32	28	0.8	0.6
26.	2169	8800	9500	62	60	34	38	2	2	-	-	6/14	5/18	120	120	105	140	28	35	0.5	0.9
27.	51590	7600	8800	58	58	40	38	2	4	-	-	10/20	8/15	86	96	83	99	21	21	0.5	0.7
28.	51659	7000	8900	59	65	38	32	3	3	-	-	2/4	2/4	116	118	98	115	25	19	0.9	0.9
29.	52421	7900	7900	68	70	26	24	4	4	2	2	10/20	4/8	71	80	91	110	25	23	0.7	0.7
30.	53206	7200	7300	55	60	42	38	3	2	-	-	8/16	4/8	83	95	123	125	20	23	0.7	0.6
31.	2273	8400	8500	60	61	37	38	3	2	-	-	10/20	4/8	112	78	132	125	18	16	0.6	0.7
32.	2310	7600	7600	59	60	36	35	5	3	-	2	14/28	8/16	82	80	95	120	15	16	0.6	0.6
33.	2358	7100	7100	60	58	36	38	4	4	-	-	20/40	8/16	76	85	98	100	21	20	0.7	0.8
34.	56342	8200	9200	63	65	33	33	4	2	-	-	10/22	9/18	83	103	74	94	33	35	0.4	0.6
35.	2551	8000	9600	65	70	32	27	3	3	-	-	3/6	3/6	83	83	110	125	22	28	0.6	0.4
36.	2651	8500	9800	60	65	37	34	3	1	-	-	15/30	10/20	96	99	126	145	32	26	0.8	0.7
37.	2869	8800	10300	60	62	35	32	4	5	1	1	10/20	6/15	83	87	99	118	20	29	0.8	0.8
38.	2878	9000	11000	57	60	39	40	4	-	-	-	7/18	5/15	82	112	84	106	32	35	0.7	0.6
39.	2928	7800	8600	57	60	38	36	3	2	2	2	3/7	3/7	78	98	108	124	31	29	0.5	0.9
40.	2936	8800	9600	64	65	34	35	2	-	-	-	3/6	2/4	119	120	77	96	24	29	0.4	0.8

URINE AND MOTIONS EXAMINATION BEFORE AND AFTER TREATMENT – OP & IP PATIENTS0.

S. NO	IP NO	URINE								MOTION					
		Before Treatment				After Treatment				Before Treatment			After Treatment		
		Albumin	Sugar	Deposits		Albumin	Sugar	Deposits		Ova	Cyst	Occult blood	Ova	Cyst	Occult blood
				Pus Cells	Epi. cells			Pus cells	Epi. cells						
1.	1731	NIL	NIL	1-2	1-2	NIL	NIL	2-4	1-2	NIL	NIL	NIL	NIL	NIL	NIL
2.	1722	NIL	NIL	3-5	2-4	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
3.	43036	NIL	NIL	1-2	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
4.	43475	NIL	NIL	2-3	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
5.	43676	NIL	NIL	NIL	NIL	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
6.	43662	NIL	NIL	4-5	4-5	NIL	NIL	0-4	1-5	NIL	NIL	NIL	NIL	NIL	NIL
7.	43843	NIL	NIL	2-3	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
8.	44381	NIL	NIL	1-2	2-4	NIL	NIL	0-1	0-4	NIL	NIL	NIL	NIL	NIL	NIL
9.	1782	NIL	NIL	2-4	4-5	NIL	NIL	1-2	1-5	NIL	NIL	NIL	NIL	NIL	NIL
10.	1813	NIL	NIL	4-5	4-5	NIL	NIL	1-4	4-5	NIL	NIL	NIL	NIL	NIL	NIL
11.	1811	NIL	NIL	1-2	1-2	NIL	NIL	0-1	0-1	NIL	NIL	NIL	NIL	NIL	NIL
12.	45073	NIL	NIL	1-2	1-2	NIL	NIL	1-2	0-1	NIL	NIL	NIL	NIL	NIL	NIL
13.	1831	NIL	NIL	1-2	1-2	NIL	NIL	1-2	0-1	NIL	NIL	NIL	NIL	NIL	NIL
14.	1895	NIL	NIL	1-2	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
15.	46911	NIL	NIL	2-4	4-5	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
16.	47179	NIL	NIL	2-4	2-4	NIL	NIL	0-1	1-2	NIL	NIL	NIL	NIL	NIL	NIL
17.	1956	NIL	NIL	1-2	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
18.	47670	NIL	NIL	1-2	2-4	NIL	NIL	0-1	0-1	NIL	NIL	NIL	NIL	NIL	NIL
19.	48469	NIL	NIL	1-2	1-2	NIL	NIL	1-2	0-1	NIL	NIL	NIL	NIL	NIL	NIL
20.	2008	NIL	NIL	1-2	1-2	NIL	NIL	2-4	1-2	NIL	NIL	NIL	NIL	NIL	NIL

URINE AND MOTIONS EXAMINATION BEFORE AND AFTER TREATMENT – OP & IP PATIENTS

S. NO	OP NO	URINE								MOTION					
		Before Treatment				After Treatment				Before Treatment			After Treatment		
		Albumin	Sugar	Deposits		Albumin	Sugar	Deposits		Ova	Cyst	Occult blood	Ova	Cyst	Occult blood
				Pus Cells	Epi. cells			Pus cells	Epi. cells						
21.	49412	NIL	NIL	4-5	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
22.	49414	NIL	NIL	2-4	2-4	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
23.	50023	NIL	NIL	1-2	1-2	NIL	NIL	2-4	2-4	NIL	NIL	NIL	NIL	NIL	NIL
24.	50064	NIL	NIL	1-2	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
25.	51334	NIL	NIL	2-4	2-4	NIL	NIL	2-4	1-2	NIL	NIL	NIL	NIL	NIL	NIL
26.	2169	NIL	NIL	1-2	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
27.	51590	NIL	NIL	1-2	1-2	NIL	NIL	2-4	2-4	NIL	NIL	NIL	NIL	NIL	NIL
28.	51659	NIL	NIL	1-2	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
29.	52421	NIL	NIL	1-2	1-4	NIL	NIL	1-2	2-4	NIL	NIL	NIL	NIL	NIL	NIL
30.	53206	NIL	NIL	2-4	2-4	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
31.	2273	NIL	NIL	1-2	2-3	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
32.	2310	NIL	NIL	1-2	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
33.	2358	NIL	NIL	NIL	NIL	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
34.	56342	NIL	NIL	1-2	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
35.	2551	NIL	NIL	2-4	2-4	NIL	NIL	1-2	0-1	NIL	NIL	NIL	NIL	NIL	NIL
36.	2651	NIL	NIL	1-2	1-2	NIL	NIL	1-2	2-3	NIL	NIL	NIL	NIL	NIL	NIL
37.	2869	NIL	NIL	3-5	2-4	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
38.	2878	NIL	NIL	2-4	1-2	NIL	NIL	1-2	2-3	NIL	NIL	NIL	NIL	NIL	NIL
39.	2928	NIL	NIL	1-2	2-3	NIL	NIL	1-2	2-3	NIL	NIL	NIL	NIL	NIL	NIL
40.	2936	NIL	NIL	2-4	4-5	NIL	NIL	1-2	1-4	NIL	NIL	NIL	NIL	NIL	NIL

Discussion

AZHAL KEEL VAAYU

DISCUSSION

Osteoarthritis is a chronic degenerative disorder of multifactorial etiology characterized by loss of articular cartilage, hypertrophy of bone at the margins, etc with the biochemical and morphological alterations of the synovial membrane and the joint capsule. Knee pain is the commonest symptom seen in people above 40 years which affects their daily activities and drives them to consult a doctor. Osteoarthritis, the most common form of arthritis is a major contributor to functional impairment and reduced independence in older adults so with this background, the disease osteoarthritis in knee is taken for the study.

As a pursuit in fulfilling the prime aim of this study the following trial drugs for treating the diseases azhal keel vaayu were selected

1. **Amirtha kandhi kukkil vallathy as the internal medicine**
2. **Ilagu vida mutti thylam as the external medicine**

A detailed study of the disease osteoarthritis was done and was correlated to the signs and symptoms of azhal keel vaayu mentioned in the siddha literatures.

In order to fulfill the primary objectives of this study, a complete open clinical trial was done with the trial drugs in treating the disease azhal keel vaayu.

The clinical evaluation was done as per the protocol and the data were collected by using prescribed forms. The disease azhal keel vaayu was studied under various criteria to meet the secondary objectives of the study and the results were observed and tabulated. The various criteria and the results were discussed here under.

Gender distribution

Equal numbers of male and female patients were voluntarily selected for this study so the inference obtained had no significant data.

Age distribution

This study shows high incidence of azhal keel vayu was in above 50 years of age. Azhal keel vaayu which is compared with osteoarthritis which is a degenerative disease, so the above inference explained it's significant as the age plays an important role upon the degenerative disorder.

The result inferred by me coincides with the result obtained from the study Brooks .P., (2003).

Kaalam distribution

The higher incidence (97.5%) was found to be in pitha kaalam (34-66 years).

Occupational status

From the observed result it is found that the rate of incidence is higher in occupational group which include home maker (40%) and farmer & manual labour (32.5%) group from these result we came to know that may be for women's, occupations which require knee bending and physical demands were generally not associated with Osteoarthritis.

But among men occupations which combine knee bending and physical demands may be an important cause for osteoarthritis knee.

The same was observed in the previous studies like Felon DT et al., (1991) and MC Williams DF et al., (2011).

Seasonal variations

From the inferred data it is noted that 24 patients were admitted in kaarkaalam 5 patients in Koothirkalam and 11 patients in mudhuvenil kalam.

Actually the study period for this clinical trial lies between June -2011 to January-2012. So the obtained result may not have a scientific value to influence the disease and a long period study is required to evaluate the influence of seasonal variations.

Thinai reference

The obtained result shows that incidence was higher in maruthanilam.

As this study is a single centered study the obtained results may not have a scientific evolution of influence of living lands on osteoarthritis so a thorough multicenter study in wide spread areas are needed to evaluate it.

Socio -economic status

Here 60% were reported to be poor and 35% cases were from middle class and the remaining 5% were rich. This higher incidence in the poor population may be due to over use of the joint by farmers or manual worker and uneducation or unawareness about the knee problem among the poor. The incidence in the other population group may be due to over - weight.

This inferred result coincides with the results of the study by F.Callahan et al., (2011).

Dietary habits

36 patients were reported to have mixed diet. So this data has no statistically significant data.

Precipitating factors:

Inferred result proves that the obesity (52.5%) and the occupational relation (i.e. over use of the joint) (30%) were the most important precipitating factors.

The same inference was obtained from many previous studies like David T.Felson MD, MPH et al., (2005).

Mode of onset:

According to this study 100% of cases were reported to had gradual onset of disease. Since osteoarthritis is a degenerative disorder it usually has a gradual onset of symptoms.

Above inferred result well coincides with many of the previous studies like David T.Felson M.D, M.Ph., (2005).

Clinical features

From the tabulated data, it was clear that all the patients had pain, tenderness, crepitations and restricted movement as their predominating symptoms. Then swelling (57.5%) and morning stiffness (52.5%) were found to be predominant next to the above symptoms.

Distribution of Three Thodams

a) Vatham:

Samanan and viyanan were found to be affected in all the 40 patients.

b) Pitham:

Saathagam was affected in all the cases

c) Kabam:

In all the cases santhigam was found to be affected and so avalambagam was affected in all cases.

Udal Kattugal:

Among the seven udal Kattugal, Saaram, Oon, Kozhuppu, enbu were found affected in all the cases and senneer was affected in 30% of the cases.

Ennvagai thervugal:

Sparisam (swelling, warmth and crepitation) were found affected in all the 40 cases.

In naadi nadai, pitha vatha naadi (50%) and vatha pitha naadi (40%) predominates among the other naadi nadai in the osteoarthritis patients.

Disturbances in Kanmenthiriums:

Kaal was affected in all the 40 cases.

Laboratory investigations were done for all the cases before and after treatment. There were no significant variations in the laboratory investigation except in certain parameters like ESR and Hb.

The phytochemical analysis of **Amritha Kandhi Kukkil Vallathy** melugu had shown the presence of chloride, sulphate, Iron (ferrous), starch, tannic acid, unsaturated compounds, reducing sugar and amino acid.

Pharmacological studies of **Amritha Kandhi Kukkil Vallathy** show significant analgesic, acute anti inflammatory and moderate chronic anti inflammatory actions. **Ilagu Vida Mutti Thylam** had moderate acute-anti inflammatory action.

Treatment

In siddha system of medicine the line of treatment primarily aimed to retain the deranged thosams and then providing relief from symptoms so before treatment each patient was advised for purgation by giving vellai-ennai-15ml with hot water during morning for first day treatment.

From the second day onwards Internal medicine -Amirtha kandhi kukkil vallathy -5gm in 3 divided doses.

External medicine -Ilagu vida mutti thylam were given.

During treatment, the patients were advised to follow pathiyam (avoid tamarind, tubers etc) and particularly advised to avoid foods which increases vatham.

Along the course of the treatment, some of the complementary therapies which were already planned for the comparison of effects like ottradam, varmam massage, asana, steam bath were given additionally to some of the patients.

The outcome is mainly assessed by reduction in severity of Joint pain, Stiffness and improvement in physical functioning and quality of life. Universal pain assessment scale used to infer proper outcomes.

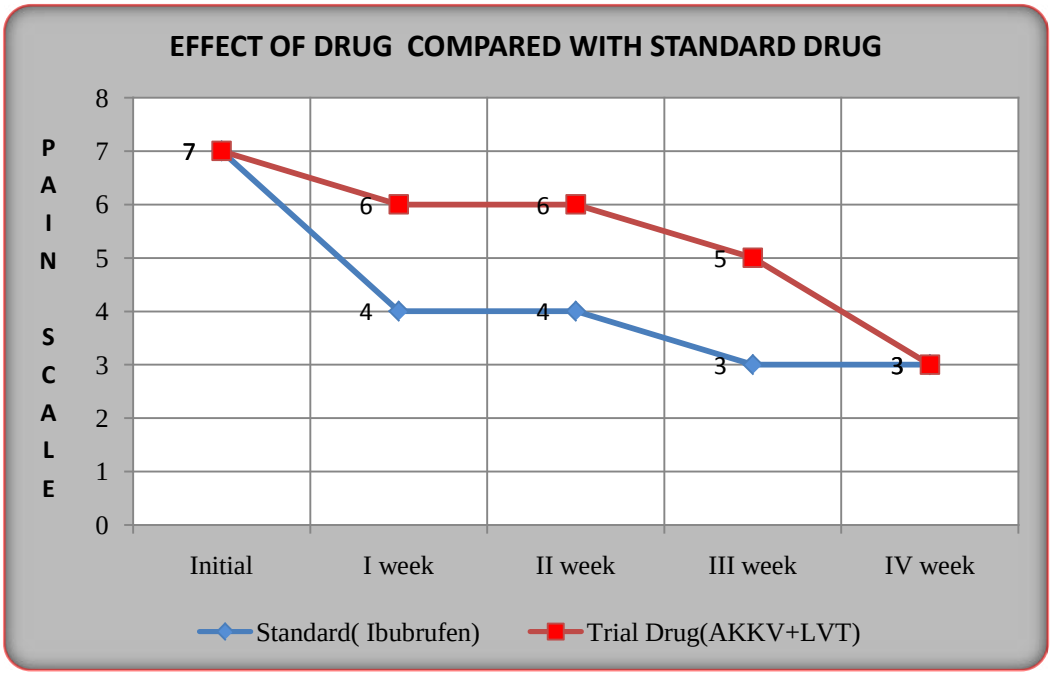
No adverse effect of both internal and external medicine was noted along the course of the treatment clinically.

A Comparison:

In one similar study of the knee Osteoarthritis, 40 patients were treated with ibuprofen 400mg thrice daily. The study lasted four weeks and patients were assessed weekly according to a standard pain assessment scale.

This clinical trial of osteoarthritis with Ibuprofen shows the results as 15 (37.5%) showed positive clinical response and 11 (27.5%) improved, with positive clinical response taken as a 20% decrease in primary outcome (pain with function).Significantly 35% of patients taking ibuprofen suffered side effects, mainly gastrointestinal bleeding.

Using pain scale analysis, a comparative graph is drawn for these two clinical trials (AKKT+LVT+CT and IBUPROFEN)



(Note: This Graph shows the effect of individual drugs from different clinical studies.)

This when compared with our study using a multivariate analysis, showed no significant difference of outcome. (P value 0.6544)

(Note: This analysis shows the effect of individual drugs from different clinical studies for the sake of comparison only.)

These shows,

- In the case of Osteoarthritis, Amirtha Kandhi Kukil Vallathy and Ilagu Vida Mutti Thylam along with complementary therapies appears to be as effective as a leading NSAID treatment, but with far fewer side effects.
- Amirtha Kandhi Kukkil Vallathy and Ilagu Vida Mutti Thylam along with complementary therapies is non-toxic and is safe for long-term administration.
- Although quick pain relief is achieved using standard drug, our trial drug eventually reaches there at the end of the study period.

Summary

AZHAL KEEL VAAYU

SUMMARY

The disease osteoarthritis was comparatively studied with the disease Azhal Keel vaayu with reference to its etiology, pathogenesis and clinical features. In considering the following facts, that Knee Osteoarthritis is the most common form of arthritis (Conagha., 2008); knee Osteoarthritis is the leading cause of chronic disability in the elderly population (MMWR orls mortal., 2001) and only symptomatic relief with greater side effects (liver damage and gastrointestinal bleeding) (Flood J., March 2010) was available in modem science, there is a need to evaluate the safe and effective drug for osteoarthritis. So, **Amritha Kandhi Kukkil Vallathy** as internal medicine and **Ilagu Vida Mutti Thylam** as external medicine was selected and a clinical trial in Govt. Siddha Medical College, Palayamkottai was conducted with these drugs. For this 40 cases were selected in which 20 were treated in OutPatient ward and remaining 20 in InPatient ward. The pre clinical studies of the trial drug were found to be encouraging.

Pharmacological analysis of amirtha kandhi kukkil valathy shows

- significant analgesic action
- significant Acute anti inflammatory action
- moderate chronic anti inflammatory action.

Pharmacological analysis of Ilagu vida mutti thylam shows

- moderate acute anti inflammatory action

Since complementary therapies or manual therapies like massage, fomentation, exercises plays a significant role in treating osteoarthritis (French HP et al., 2011). Some of the complementary therapies from siddha system are manipulated along with trial drugs depending upon the severity of the disease.

Daily progress was observed to evaluate the efficacy. The results obtained were found to be auspicious. Particularly results by complementary therapies were found to be very auspicious.

No adverse reactions were found. Hence the trial drug was found to be safe and effective.

Conclusion

AZHAL KEEL VAAYU

CONCLUSION

In this clinical study "**Amritha Kandhi Kukkil Vallathy**" and "**Ilagu Vida Mutti Thylam**" were taken as Internal & External drug respectively for treating the disease Azhal Keel Vaayu.

In the pre clinical study Pharmacological evaluation of the trial drugs shows

- Significant analgesic effect
- Significant acute anti inflammatory effect
- Moderate chronic anti inflammatory effect.

The Overall results of efficacy of the trial drugs along with complementary therapies by reducing the clinical signs and symptoms like pain, swelling, morning stiffness in this Clinical study were found to have marked effect in 27.5% cases, Moderate effect in 50% cases, Mild in 20% cases and no effect in 2.5% cases.

The costs of the trial medicines were relatively economical. The raw drugs are easily available and the preparation was also convenient. No adverse effects and side effects were found clinically for the trial drugs.

So the clinical effect of the trial drugs along with complementary therapies was found to be Moderate in treating the disease Azhal keel vaayu (Osteoarthritis).

Annexure

AZHAL KEEL VAAYU

SCREENING COMMITTEE

CHAIRMAN :

Dr. N. CHANDRA MOHAN DOSS, M.D.,(S)
Prof. & Head of the Dept. of
Kuzhanthai Maruthuvam
Govt. Siddha Medical College
Palayamkottai

MEMBER I :

Screning Committee
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Palayamkottai - 627 002.

MEMBER II :

Head of Department
P.G. NOI NADAL (Pathology)
Govt. Siddha Medical College,
PALAYAMKOTTAI - 627 002.

REMARKS :

INSTITUTIONAL ANIMAL ETHICS COMMITTEE (I.A.E.C)

GOVERNMENT SIDDHA MEDICAL COLLEGE

PALAYAMKOTTAI

No...../IAEC/GSMC/2011-12 DT. 3.5.2011

CERTIFICATE

This to certify that the project title ..A..Study...on...ALHAL...KEEL.....

...VAAYU..and..the..drug..of..choice..is...AMIRTHA.KANDHI..KUKKIL

...VALLATHY..and..PLAGU..VIDA..MUTTI...THYLAM.....

Has been approved by the IAEC on condition basis.

Name of chairman:

Name of Member secretary:

Nominee:

Signature with date:

(Kindly make sure that minutes of the meeting duly signed by all the participants are maintained by office)

GOVT. SIDDHA MEDICAL COLLEGE,

PALAYAMKOTTAI, TIRUNELVELI

ETHICAL COMMITTEE CLEARANCE CERTIFICATE

MEMBERS SECRETARY : DR. KAMALAM M.D.(S)

This is to certify that the bonafide dissertation work done by

Dr.T.SALAIKARTHIKAIYAN Reg. No.32092008

TITLE : A STUDY ON AZHAL KEEL VAAYU

DEPARTMENT OF SIRAPPU MARUTHUVAM

DURING THE YEAR 2009 - 2012

MEMBERS

SL. NO.	DEPARTMENT	MEMBERS	SIGNATURE
1.	EXPERT CLINICIAN	DR. A. MANOHARAN, M.D.(S)	
2.	CLINICIAN FROM VARIOUS INSTITUTION A) BIO-CHEMISTRY	MR S. N. NAGAPREMA, M.SC.,	
	B) PHARMACOLOGY	THIRU. M. KALAIVANAN, M.SC.,	
3.	RTD. JUDGE/LAWYER	MR. D.A. PRABHAKARAN, M.A., M.L.,	
4.	SOCIAL SCIENTIST	DR. SUDHA, M.SC., PHD.,	29/6/11
5.	PHILOSOPHER	DR. P. VALANARASU	
6.	LAY PERSON FROM PUBLIC	T.N. UMAPATHY SIVAN	

PLACE : PALAYAMKOTTAI
DATE : 29.6.11

29/6/11
Dr. R. KAMALAM, M.D.(S)
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HOD of Toxicology Dept. (PG)
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Palayamkottai
Tirunelveli District

Preparation &properties of drugs

AZHAL KEEL VAAYU

ANNEXURE - I

STANDARD OPERATING PROCEDURE FOR PREPARATION OF AMIRTHA KANTHI KUKKIL VALLATHY (Internal) AND ILAGU VIDA MUTTI THYLAM (External)

SOURCE OF RAW DRUGS:

The required drugs for preparation of **AMIRTHA KANDHI KUKKIL VALLATHY** (Internal) and **ILAGU VIDA MUTTI THYLAM** (External) are purchased from a well reputed country shop and Raw drugs are Authenticated by Medical botanist of Govt. Siddha Medical College, Palayamkottai, then purified and the medicines are prepared in the Gunapadam laboratory of Govt. Siddha Medical College, Palayamkottai.

AMIRTHA KANDHI KUKKIL VALLATHY- INTERNAL MEDICINE

REF: AGATHIYAR VALLATHY 600

INGREDIENTS:

Purified kandhagam (Sulphur)	280 gm
Purified kukkil (Shorea robusta)	140 gm
Purified serankottai(Semecarpus anacardium)	140 gm
Seenthil sarkarai (Tinospora cordifolia)	140 gm
Purified ell(Sesamum indicum)	140 gm
Purified amukkura(Withania somnifera)	105 gm
Purified parangipattai(Smilax chinensis)	105 gm
Purified kodiveli verpattai(Plumbago zeylanicum)	70 gm
Valuluvai arisi(Celastrus paniculatus)	35 gm
Kottam(Costus species)	35 gm
Valmilagu(Piper cubeba)	35 gm
Paereechu(Phoenix species)	35 gm
Sadamanjil(Nardostachys jatamansi)	35 gm
Sivanarvembu(Indigofera asphalanthoides)	35 gm

Vetti ver(Vettiveria zizhinoides)	35 gm
Vellarugu(Enicostemma axillare)	35 gm
Sanganguppi(Clerodendron inerme)	35 gm
Kadukkai thol(Terminalia chebula)	35 gm
Thandrikkai(Terminalia bellerica)	35 gm
Nellikai(Emblica officinalis)	35 gm
Sirunagapoo(Mesua ferra)	35 gm
Thakkolam (Illicium verum)	35 gm
Seerakam(Cuminum cyminum)	35 gm
Karboki(Psoralea corylifolia)	35 gm
Karunjeerakam(Nigella sativa)	35 gm
Thalisapathri(Taxus buccatum)	35 gm
Nannari(Hemidesmus indica)	35 gm
Nerunji mul(Tribulus terrestris)	35 gm
Nilappanai(Curculigo orchioides)	35 gm
Thanneervittan kilangu(Asparagus racemosus)	35 gm
Kothumalli(Coriandrum sativum)	35 gm
Kalmatham(Asphaltum)	35 gm
Kalnar(Asbestos)	35 gm
Elam(Elettaria cardamomum)	35 gm
Chukku(Zingiber officinale)	35 gm
Milagu(Piper nigrum)	35 gm
Thippili(Piper longum)	35 gm
Karuvappattai(Cinnamomum verum)	35 gm
Chittrarathai(Alpinia galanga)	35 gm
Panai vellam(Palm jaggery)	1540 gm
Then(Honey)	280 gm

PURIFICATION OF DRUGS:

Kandhakam:

Steamed with cow`s urine by placing it underground. Then steaming process is repeated with each of onion juice, Solanum nigrum juice, Amaranthus tricolor juice, Copper sulphate mixed with curd.

Kungiliyam:

Fermented with neem bark decoction for three days and washed with cool water. Same is repeated with a mixture of butter milk, vinegar, and lime juice. Then it is boiled with milk and fried with ghee.

Serankottai:

Coated with lime stone and fried with vinegar

Parangipattai and amukura:

Steamed with milk

Kodiveli:

Steamed with milk

Other drugs are cleaned and fried slightly and taken

PREPARATION:

The ingredients (except palm jaggerry and honey) are powdered and ground with honey and palm jaggerry for 12 hours to a fine consistency.

DOSE:

5 gm in three divided doses/day.

ILAGU VIDA MUTTI THYLAM - EXTERNAL MEDICINE

Ingredients :

Etti kottai seeval (chips of seeds of Strychnos nux -vomica)	- 87.5gms
Sesamum oil	- 2.6lits
Poondu (Allium sativum)	- 87.5gms
Aayil pattai thugal (Chips of bark of Holoptelia integrifolia)	-62.5gms

Method of preparation: (Ref-Siddha vaithiya thirattu pg no-292)

Soak etti kottai seeval in goat's milk for 12 hrs. Put all the ingredients in the vessel and heat it till the drugs turn to red. Then filter the oil and keep in the sunlight then use it for external purposes

DRUG STORAGE-

The trial drug *Amirtha kandhi kukkil vallathy* was stored in clean and dry glass bottles. *Ilagu vida mutti thylam* was stored in clean and dry narrow mouthed bottles.

1. கந்தகம் (Sulphur):

Characters: சுவை :கசப்பு, துவர்ப்பு

TherapeuticActions:Laxative,Cholagogue,Antiseptic,Alterative,Diaphoretic

பொதுகுணம் :-

"நெல்லிக்காய்க் கந்திக்கு நீள்பதினென் குட்டமந்தம்
வல்லை கவிசை குன்ம வாயுகண்ணோய் - பொல்லா
விடக்கடிவன் மேகநோய் வீறுசுரம் பேதி
திடக்கிரக ணீகபம்போந் தேர்"

2. குக்குலு (Commiphora mukil -Burseraceae)

Parts used : Gum resin

Therapeutic uses : It has very good anti vatha property. It is a good aphrodisiac drug also.

3. சேராங்கொட்டை (Semecarpus anacardium- Anacardiaceae)

Parts Used : Fruits and seeds

Therapeutical Actions : Alterative, Caustic

பொதுகுணம்:

"சேங்கொட்டை மெய்த்திமிரைத்தீராக் கடிவிடத்தைப்
பங்கொட்டு மூலத்தைப் பற்றுக்கும் - ஆங்கெட்டிக்
கொல்லுமீவா நத்தினொரு குன்மத்தை யும்மதனை
வெல்லும் அயிற்கண்ணாய் விள்"

4. சீந்தில் (Tinospora cordifolia-Menispermaceae)

Parts used : Leaves, stem and rhizome

Therapeutic Actions: Alterative, Antiperiodic, Aphrodisiac, Demulcent, Stimulant, Stomachic, Tonic, Diuretic.

சீந்தில் சர்க்கரை பொதுகுணம்:

"அமுதவல்லிக்கொடி யக்கார முண்டிடத்
திமிருறு மேகநோய்த் தீயெலா மாறுமெ".

5. எள்(Source of Gingelly Oil) (Sesamum indicam-Pedaliaceae)

Parts used : Leaves, flowers, fruits and seeds

Therapeutic actions: Demulcent, Laxative, Nutritive, Emollient

பொதுகுணம்:

"புத்தி நயனக் குளிர்ச்சி பூரிப்பு மெய்ப்புளகஞ்
சத்துவங் காந்தி தனியிளமை மெத்தவுண்டாங்
கண்ணோய் செவிநோய் கபால அழல் காசநோய்
புண்ணோய்போ மெண்ணெய்யாற் போற்று"

6. அமுக்கரா - (Withania somnifera- Solanaceae)

Part used: Dried root.

பொதுகுணம்:

"கொஞ்சந் துவர்ப்பாங் கொடியகயம் சூலையரி

மிஞ்சுகரப் பான்பாண்டு வெப்பதட்பு-விஞ்சி".

- அகத்தியர் குணவாடகம்

7. பறங்கிப்பட்டை (Smilax chinensis – Liliaceae)

Part used: bark

Therapeutic actions: Alterative, Antisyphilitic, Aphrodisiac, Depurative.

பொதுகுணம்:

தாகம் பலவாதஞ் தாதுநட்டம் புண்பிளவை

மேகங் கடிகிரந்தி வீழ்மூலந் - தேகமுடன்

குட்டை பகந்தமேற் கொள்வமனம் போம்பறங்கிப்

பட்டையினை யுச்சரித்துப் பார்.

8. கொடிவேலி (Plumbago zeylanica – Plumbaginaceae)

Part used: Root

பொதுகுணம்:

'கட்டிவிர ணங்கிரந்தி கால்கள் அரையாப்புக்
கட்டிச்சூ லைவீக்கங் காழ்மூலம் - முட்டி ரத்தக்
கட்டுநீ ரேற்றங் கனத்த பெருவயிறும்
அட்டுங் கொடிவேலி யாம்"

9. வாலுளுவை (Celastrus paniculatus- Celastraceae)

Parts Used : Leaves, seeds

Therapeutic actions: Aphrodisiac, Stimulant, Alterative, Nervine tonic

10. கோட்டம்-(Costus species -Costaceae)

Part used: Root

Therapeutic Actions: Antidiabetic, anti lipidemic, anti oxidant, anti microbial

11. வால்மிளகு(Piper cubeba- Piperaceae)

Part used : Dried fruits (berries)

Therapeutic Actions: Stimulant,carminative,Diuretic, Expectorant

12. பேரிச்சங்காய்(Phoenix dactilifera- Arecaceae)

Part Used : fruit,seed,gum,sugar

Therapeutic Actions: Tonic, Nutritive, Demulcent, Laxative, Diuretic

13. சடாமாஞ்சில் (Nardostachys jatamansi- Valerianaceae)

Parts used: root

Therapeutic Actions: Stimulant, Diuretic, Antispasmodic , Expectorant

14. சிவனார் வேம்பு(Indigofera aspalanthoides-Fabaceae)

Parts used: leaves, stem, flowers and root

Therapeutic actions: stimulant, demulcent.

15. வெட்டிவேர் (Vettiveria zizhinoides- Poaceae)

Part Used : Root

Therapeutic Actions: Tonic, Stimulant, Antispasmodic, Diuretic, Febrifuge.

16. வெள்ளறுகு (Enicostemma axillare – Gentianaceae)

Part used: whole plant

Therapeutic Actions: stomachic, tonic, Alterative, laxative, febrifuge.

17. சங்கன் (Azima tetracantha – Salvadoraceae)

Part used : Root

Therapeutic actions: diuretic, Stimulant, astringent, tonic, Antiperiodic.

18. சிறுநாகப்பூ (Mesua ferra- Calophyllaceae (Guttiferaceae))

Parts used : Leaves, bud, flower, seeds, root bark, etc

Therapeutic Actions: Astringent, carminative, Aromatic, Acrid, Purgative

19. தக்கோலம்:

Parts used: whole plant.

Therapeutic Actions: Antivatha ,Astringent, Febrifuge, Nutritive.

20. நற்சீரகம்(Cuminum cyminum- Umbelliferae)

Parts used: seeds

Therapeutic actions: Carminative, Stimulant, Stomachic, Astringent.

21. கார்போகரிசி (Psoralea corylifolia - Fabaceae.)

Part used : The dried fruit

Therapeutic actions: Laxative, Stimulant.

22. கருஞ்சீரகம் (Nigella sativa - Ranunculaceae)

Parts used: Seeds

Therapeutic actions: carminative, Diuretic, emmenagogue, galactogogue, anthelmintic, Stomachic, Parasiticide, Emollient.

23. தாளிசபத்திரி (Taxus buccata- Taxaceae)

Parts used: leaves

Therapeutic Actions: Stomachic, Carminative, Tonic, Expectorant.

24. நன்னாரி (Hemidesmus indicus- Apocynaceae)

Part used : root

Therapeutic actions : Alterative, Tonic, Demulcent, Diuretic, Diaphoretic

25. நெருஞ்சிமுள் (Tribulus terrestris- Zygophyllaccae)

Parts Used : Whole plant particularly fruit

Therapeutic Actions: Refrigerant,diuretic, Demulcent,Aphrodisiac,

26. நிலப்பனை (Curculigo orchioides- Hypoxidaccae)

Parts used : Rhizomes, roots

Therapeutic Actions: Tonic, Diuretic, Astringent, Carminative, Emollient

27. தண்ணீர் விட்டான் (Asparagus racemosus- Liliaccae)

Parts used : Leaves, Rhizomes

Therapeutic Actions: Nutritive, demulcent, Galactagogue, Aphrodisiac, Antispasmodic

28. மல்லி (Coriandrum sativum – Umbelliferae)

Parts used : Seeds

Therapeutic actions : Stomachic, Carminative, Stimulant, Diuretic.

29. ஏலக்காய்(Elettaria cardamonum- Zingiberaceae)

Part used : Seeds

Therapeutic actions : Stimulant, Carminative, Stomachic.

30. சுக்கு (Zingiber officinale – Zingiberaceae)

Part used : dry rhizome

Therapeutic actions: stimulant, Stomachic, Carminative.

31. மிளகு(Piper nigrum- Piperaceae)

Part used **:** The fully matured dry fruit

Therapeutic actions: Acrid, Carminative, Antiperiodic, Stimulant.

32. திப்பிலி (Piper longum – Piperaceae)

Part used **:** The fully matured dry fruit

Therapeutic actions **:** Stimulant, Carminative.

33. கருவாப்பட்டை(Cinnamomum Verum- Lauraceae)

Parts used : Bark

Therapeutic Actions: stimulant, Carminative, Aphrodisiac

34. சிற்றரத்தை (Alpinia calcarata- Zingiberaceae)

Part used : Rhizome

Therapeutic Actions: Expectorant, febrifuge, stomachic

35. பனங்கருப்பட்டி(பனை) (Borassus flabelliformis-Arecaceae)

Parts used **:** Palm jaggery

Therapeutic Actions **:** Astringent, Aphrodisiac, Diuretic, Demulcent, Nutrient, Refrigerant,Stimulant, Antiphlogistic

36. தேன் (Honey)

"அனுபான மாய்ப்பின் அவிழ்தமுமாய்த் தோன்றி
கனமான தேகநிலை காட்டிப்- பினுமே
யரசன் முதல்வோ ரையுமாட்டு வித்தாலே
பரசத் தினாற்போம் பிணி"

-தேரன் பொருட்பண்பு நூல்

தேன் உடலில் வாதமுதலிய முக்குற்றங்களைப் போக்கி தேகத்தை நன்னிலையில் வைக்கும்.

அமிர்த கந்தி குக்கில் வல்லாதி

தான்றிக்காய்

கொடிவேலி வேர்ப்பட்டை

வாலுளுவை

சிறுநாகப்பூ

எள்ளு

வால்மிளகு

சுக்கு

கல்மதம்

சேராங்கொட்டை

அமுக்கரா

எட்டி விதை

தண்ணீர்விட்டான்

திப்பிலி

கல்நார்

கருஞ்சீரகம்

சிற்றரத்தை

நெருஞ்சில் முள்

நிலப்பனை கிழங்கு

ஏலரிசி

பறங்கிப்பட்டை

பேரிச்சங்காய்

கோஷ்டம்

மிளகு

சீரகம்

சங்கன்குப்பி

சிவனார்வேம்பு

வெட்டிவேர்

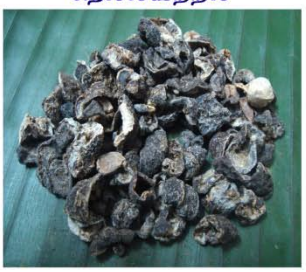
தாளிசபத்திரி

சடாமாஞ்சில்

கருவாப்பட்டை

நன்னாரி

நெல்லிவற்றல்



கடுக்காய்

கார்போகரிசி

குங்கிலியம்

கந்தகம்

வெள்ளருக்கு

தக்கோலம்

தேன்

சீந்தில் சர்க்கரை

பூண்டு

பனைவெல்லம்

கொத்தமல்லி

நல்லெண்ணெய்

ஆயில்பட்டை

அமிர்த கந்தி குக்கில் வல்லாதி மெழுகு

37. கல்நார் (ASBESTOS)

Asbestos is a curious natural white rock consisting of calcium silicate. It is found in large quantities near the town of Mysore.

Therapeutic Actions: Diuretic, Astringent.

38. கல்மதம் (Asphaltum)

Synonyms : கோமூத்திர சிலாசத்து

கல்மதம் என்பது மலையினுடைய சத்தைக் குறிக்கும்.

ILAGU VIDA MUTTI THYLAM – EXTERNAL MEDICINE

1. **எட்டிக்கொட்டை(Strychnos nux -vomica- Loganiaceae**)

Synonyms: காஞ்சிரம், விடமுட்டி

Therapeutic Actions: Antiseptic,Carminative, Purgative, Tonic, Stimulant,

பொதுகுணம்:-

"கைக்கறுப்பு சன்னி கடிவிடங்குட் டுவைதவலி
எய்க்கவரு தாதுநட்டம் என்பதும் போம் - மைக்கண்ணாய்
கட்டி கரப்பான் கனமயக்கு பித்தமுமில்
எட்டி மரக் கொட்டை யினாவே"

2. **வெள்ளுள்ளி (Allium sativum – Liliaceae**)

Part used: Bulb

பொதுகுணம்:

"சன்னியோடு வாதத் தலைநோவு தாள்வலி
மன்னிவரு நீர்க்கோவை வன்சீதம் - அன்னமே
உள்ளுள்ளி கண்பாய் உளைமூல ரோகமும்
வெள்ளுள்ளி தன்னால் வெருண்டு"

3. ஆயில் பட்டை (Holoptelia Integrifolia- Ulmaecea)

Synonyms : Aayil, Avithal, Poothiyam, Aavil pungu

Parts used : Stem bark

Therapeutic Actions: Febrifuge, anti inflammatory, stomachic, laxative

பொதுகுணம்:

"மேகப் பிடிப்பிற்கும் மிஞ்சுமதன் சூலைக்கும்
வாகுறவே ஆயா மரத்தோலைப் - பாகமுடன்
நன்கரைத்து பற்றிடவே நாடாது நோயெனவே
பொன் மலர்ப்பூங் கோதாய் புகல்

4. வெள்ளாட்டுப்பால்

"சீதமதி சாரஞ் சிலேஷ்ம்மறும் புண்ணாறும்
வாத சிலேஷமமுப்போ மாய்ந்து".

வெள்ளாட்டுப் பாலினால் வாதபித்த தொந்தம் சுவாசகாசம், சீதாதிசாரம், கபதோஷம், விரணம் , வாதத்திலுண்டாகிய வீக்கம் முதலிய துன்பந் தீரும். நல்ல பசியும் உண்டாகும்.

5. நல்லெண்ணெய் (Sesamum indicum- Pedaliaceae)

பொதுகுணம்:

"புத்தி நயனக் குளிர்ச்சி பூரிப்பு மெய்ப்புளகஞ்
சுத்துவங் கந்தி தனியிளமை - மெத்தவுண்டாங்
கண்ணோய் செவிநோய் கபாலவழல் காசநோய்
புண்ணோய்போ மென்ணெய் யாற் போற்று"

இலகுவிடமுட்டி தைலம்

எட்டி விதை

நல்லெண்ணெய்

ஆயில்பட்டை

வெள்ளுள்ளி

இலகுவிடமுட்டி தைலம்

Bio – chemical analysis

AZHAL KEEL VAAYU

ANNEXURE - II

GOVT SIDDHA MEDICAL COLLEGE- PALAYAMKOTTAI

BIO – CHEMICAL ANALYSIS OF AMIRTHA KANTHI KUKKIL VALLATHY

PREPARATION OF THE EXTRACT:

5gms of the drug was weighed accurately and placed in a 250ml clean beaker. Then 50ml of distilled water added to it and dissolved well. Then it was boiled well for about 10 minutes. It was cooled and filtered in a 100ml volumetric flask and then it is made up to 100ml with distilled water. This fluid was taken for analysis.

Qualitative Analysis

S.No.	Experiment	Observation	Inference
1.	**Test for calcium** 2ml of the above prepared extract is taken in a clean test tube. To this add 2 ml of 4% ammonium oxalate solution.	No white precipitate is formed.	Indicates the **absence of** calcium.
2.	**Test for sulphate:** 2ml of the extract is added to 5% barium chloride solution.	No white precipitate is formed.	Indicates the **Absence** of sulphate.
3.	**Test for chloride** The extract is treated with silver nitrate solution.	A white precipitate is formed.	Indicates the **presence** of chloride.

4.	**Test for carbonate** The substance is treated with concentrated HCl.	No brisk effervescence is formed.	**Absence** of carbonate.
5.	**Test for Starch** The extract is added with potassium ferro cyanide.	Blue colour is formed	Indicates the **presence** of Starch
6.	**Test for iron Ferric** The extract is treated with concentrated glacial acetic acid and potassium ferro cyanide.	No blue colour is formed.	**Absence** of ferric iron.
7.	**Test for iron Ferrous:** The extract is treated with concentrated nitric acid and ammonium thio cyanate.	Blood red colour is formed.	Indicates **presence of** ferrous iron.
8.	**Test for phosphate** The extract is treated with ammonium molybdate and concentrated nitric acid.	No Yellow precipitate is formed.	Indicates the **Absence** of phosphate.
9.	**Test for albumin** The extract is treated with Esbach's reagent.	No yellow precipitate is formed.	**Absence** of albumin.
10.	**Test for Tannic acid** The extract is treated with ferric chloride reagent.	Blue black precipitate is formed	Indicates the **Presence** of Tannic acid
11.	**Test for unsaturation** Potassium permanganate solution is added to the extract.	It gets decolorized.	Indicates the **presence of** unsaturated compound.

12.	**Test for the reducing sugar** 5ml of benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts.	Colour change occurs.	Indicate the **presence of** reducing sugar
13.	**Test for amino acid:** One or two drops of the extract are placed on a filter paper and dried it well. After drying, 1% ninhydrin is sprayed over the same and dried it well.	Violet colour is formed.	Indicates the **presence of** Amino acid.
14.	**Test for zinc:** The extract is treated with potassium ferrocyanide	No white precipitated	**Absence** of zinc

Result:

The trial drug **AMIRTHA KANTHI KUKKIL VALLATHY contains**

1. ***Chloride***
2. ***Starch***
3. ***Ferrous iron***
4. ***Tannic acid***
5. ***Unsaturated compound***
6. ***Reducing sugar***
7. ***Amino acid***

Pharmacological analysis

AZHAL KEEL VAAYU

ANNEXURE – III

GOVT SIDDHA MEDICAL COLLEGE- PALAYAMKOTTAI

PHARMACOLOGICAL ANALYSIS

ANALGESIC STUDY OF AMIRTHA KANTHI KUKKIL VALLATHY

Aim:

To study the analgesic effect on albino rats by tail flick method.

Preparation of the test Drug:

1 gram of Amirtha kandhi kukkil vallladhy was suspended in 10ml of Hot Water as suspending agent. This 1 ml contained 100mg of the test drug.

Procedure:

Nine Male Healthy albino rats (weighing 80-100gms) were used for this study. The animals were allowed, free access to food and water until they brought for the experiment. The animals which showed the positive response to the stimulus (within a given time) were selected for the study. After the selection of animals which were responding to stimulus within 2 seconds, they were divided into three groups, each group consisting of three rats.

The hot water was maintained at 55°C. The tip of the tail was immersed into the water bath and the time was noted when the rat flicked the tail. First group was given 1ml of water and kept as control. Second group was administered with paracetamol at a dose of 20mg/100gm of body weight. Third group as given the dose of 100mg/100gm body weight of the animal .After the drug administration, the reaction time of each rat after half an hour and one hour were noted in each

group (when a rat fails to flick the tail, it should not be continued beyond 8 seconds to avoid injury) and the average was calculated.

The results of control group, standard group and drug treated group were tabulated and compared.

STUDY OF ANALGESIC EFFECT USING THE DRUG AMIRTHA KANTHI KUKKIL VALLATHY

Name of the Groups	**Dose/ 100 gram body weight**	**Initial reading**	**After drug administration**			**Mean difference**
			½ hr Average	1 hr Average	1 1/2hr Average	
Control (Water)	2 ml	2.0 sec	2.0 sec	2.0 sec	2.0 sec	0.0 sec
Standard (Paracetamol)	20 mg	2.0 sec	2.5 sec	4.5 sec	6.5 sec	4.5 sec
Test drug (AKKV)	100 mg	2.0 sec	2.3 sec	3.5 sec	5.8 sec	3.8 sec

AKKV- Amirtha Kandhi Kukkil Vallathy

Inference:

The trial drug had significant **analgesic action**.

STUDY OF ACUTE ANTI – INFLAMMATORY ACTIVITY IN RATS USING THE DRUG AMIRTHA KANTHI KUKKIL VALLATHY BY HIND – PAW METHOD

Aim:

To demonstrate the acute anti-inflammatory activity of *Amirtha kanthi kukkil vallathy* in albino rats by Hind-paw method.

Procedure:

Nine healthy albino rats weighing 100-150 gm were taken and divided into three groups, each consisting of three rats.

First group was kept as control by giving distilled water orally 2ml/100gm body weight. The second group was given ibuprofen at a dose of 20mg /100gm body weight. The third group received the test drug at a dose 100mg /100g body weight.

Before administration of test drug, the hind-paw volumes of all rats were measured. This was done by dipping the hind-paw upto the tibio-tarsal junction into a mercury plethysmograph. While dipping the hind-paw, by pulling the syringe piston, the level of mercury in the centre small tube was made to coincide with red marking and reading was noted from the plethysmograph.

Soon after measurement, the drugs were administered orally. One hour later, a sub-cutaneous injection of 0.1ml of 1% (W/V) Carrageenan in water was made into plantar surface of both hind-paws of each rat. Three hours after carrageenan injection, the hind paw volume was measured once again. The difference between the initial and final volume was calculated and compared. This method is more suitable for studying the anti-inflammatory activity in acute inflammation. The values are tabulated.

STUDY OF AMIRTHA KANTHI KUKKIL VALLATHY IN ACUTE ANTI – INFLAMMATORY ACTIVITIES

Group	Dose volume orally	Initial reading	Final reading	Mean difference	Percentage Inflammation	Percentage Inhibition
Control	Water 2 ml	0.55	1.45	0.9	100	-
Standard	Ibuprofen 20mg/100gm	0.55	0.75	0.20	22.2	77.8
Test drug	100mg / 100gm	0.55	0.85	0.35	38.8	61.2

Result:

The drug has **significant acute anti-inflammatory action.**

STUDY OF CHRONIC ANTI-INFLAMMATORY BY COTTON – PELLETS GRANULOMA METHOD IN RATS EFFECT USING THE DRUG AMIRTHA KANTHI KUKKIL VALLATHY

Drug:

AMIRTHA KANTHI KUKKIL VALLATHY

Aim:

To study the chronic anti-inflammatory activity of the drug in albino rats by cotton pellets implantation (granuloma) method.

Procedures:

Cotton pellets each weighing 10mg was prepared and sterilized in an autoclave for about one hour under 15 lbs atmosphere pressure. Nine Albino rats weighing between 100-200gm were selected and were divided into 3 groups. Each rat was anaesthetized with ether and cotton pellets were implanted subcutaneously in the groin, two in each side.

First group was kept as control group giving distilled water of 1ml/100gm of body weight. To the second group the standard drug Ibuprofen in a dose of 20mg/100gm body weight was given. The third group of animals was given test drug *Amirtha Kandhi Kukkil Vallathy* in a dose of 100mg/100gm of body weight

On the eighth day the rats were sacrificed and the pellets were removed and weighed. Then they were put in an incubator at 60ºC-80ºC and then weighed.

The concordant weight was noted for all groups and compared.

THE EFFECT OF AMIRTHA KANTHI KUKKIL VALLATHY IN CHRONIC ANTI – INFLAMMATORY STUDY

Group	Dose given orally	Pellet Weight	Pellet Weight of the Granuloma of drugs	Percentage inflammation	Percentage inhibition
Control	Water 2 ml	10 mg	250 mg	100	-
Standard	Ibuprofen 20mg/100gm body weight	10mg	55mg	22	78
Test drug	100mg/100gm body weight	10 mg	120 mg	48	52

Inference:

The drug **AMIRTHA KANTHI KUKKIL VALLATHY shows Moderate chronic anti – inflammatory action**.

ACUTE ANTI - INFLAMMATORY STUDY ON ILAGU VIDA MUTTI THYLAM (EXTERNAL USE) BY HIND-PAW METHOD IN ALBINO RATS

Aim:

To study the acute anti-inflammatory activity of the test drug ILAGU VIDA MUTTI THYLAM

Preparation of the test drug:

The *Ilagu vida mutti thylam* was prepared as per the preparation given in siddha vaithiya thirattu

Procedure:

Nine healthy albino rats weighing 100-150gm were taken and divided into three groups, each consisting of 3 rats.

First group was kept as control by giving distilled water of 2ml/100gm of body weight. The second group was kept as test group. The third group was given the standard drug.

Before application of the test drug the Hind-paw volume of all the rats were measured. This was done by dipping the Hind-paw up to the tibio-femoral junction into a mercury plethysmograph. While dipping the Hind-paw, by pulling the syringe piston, the level of mercury in the centre small tube was made to coincide with red marking and reading was noted from the plethysmograph.

One hour later, a sub-cutaneous injection of 0.1ml of l %(w/r) Carrageenan water made into plantar surface of both Hind-paw of each rat. To the second (last) group *Ilagu vida mutti thylam* was topically applied for three

times over the inflammed surface in a thin layer for every 15mts for an hour. To the contol group no drug was applied over the inflammed surface. To the standard group the standard drug Ibuprofen in a dose of 20mg/100gm body weight was given.

Three hour after injection the Hind-paw volume was measured once again. The difference between the initial and final volume would show the amount of inflammation. Taking the volume in the control group as 100% of inflammation, anti – inflammatory effect of the test group is calculated.

EFFECT OF ILAGU VIDA MUTTI THYLAM

Group	**Drugs**	**Dose 100 gm of body weight**	**Initial value**	**Final value**	**Difference**	**Percentage Inflammation**	**Percentage Inhibition**
Control	Water	2ml	0.55	1.45	0.9	100	-
Standard	Ibuprofen	20mg	0.55	0.75	0.20	22.2	77.8
Test drug	IVMT	Ext	0.70	1.1	0.4	44.4	55.6

IVMT- ILAGU VIDA MUTTI THYLAM

Inference: The test drug has MODERATE anti-inflammatory action externally.

Assessment Forms

AZHAL KEEL VAAYU

ANNEXURE – IV

ASSESSMENT FORMS

FORM I - SCREENING FORM

FORM II - CONSENT FORM

FORM III - CASE PROFORMA

FORM IV - LABORATORY INVESTIGATIONS

FORM V - CLINICAL ASSESSMENT

FORM VI - PATIENT WITHDRAWAL FORM

FORM VII - DRUG COMPLIANCE FORM

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL

PALAYAMKOTTAI.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

AN OPEN CLINICAL TRIAL OF AMIRTHA KANDHI KUKKIL VALLATHY & ILAGU VIDA MUTTI THYLAM FOR AZHAL KEEL VAAYU (OSTEOARTHRITIS)

FORM I –SCREENING FORM

1. OP/ IP No: 2. BED No:

3. Sl. No: 4. NAME:

5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ADMISSION: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

I. INCLUSION CRITERIA:

1. Sex: Both Male and Female.
2. Pain and swelling present in knee joints.
3. Crepitations present in knee joints.
4. Early morning stiffness.
5. Tenderness

II. EXCLUSION CRITERIA:

1. Diabetes Mellitus
2. Hypertension
3. Cardiac diseases
4. Pregnancy and Lactation
5. Patients with any other serious illness
6. Peptic ulcer
7. Severe trauma
8. Any other systemic diseases

III. WITHDRAWAL CRITERIA:

1. Development of any adverse reaction (ADR
2. Occurrence of any other systemic illness.

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Form: II CONSENT FORM

CERTIFICATE BY INVESTIGATOR

I certify that I have disclosed all the details about the study in the terms readily understood by the patient.

Signature……. Date……

Name……

CONSENT BY PATIENT

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of drug treatment and follow-up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of ‘Amirtha kandhi kukkil vallathy (Internal drug)’ and ‘Ilagu vida mutti thylam (External drug)’ for the treatment of ‘Azhal keel vaayu’ (osteoarthritis).

Signature……. Date…….

Name……

அரசினர் சித்த மருத்துவக் கல்லூரி மற்றும் மருத்துவமனை,பாளையங்கோட்டை

பட்டமேற்படிப்பு சிறப்புமருத்துவத்துறை

"அமிர்த கந்தி குக்கில் வல்லாதி " மற்றும் "இலகு விட முட்டி தைலம் " இவற்றின் பரிகரிப்புத்திறனைக் கண்டறியும் மருத்துவ ஆய்வு

ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் இந்த ஆய்வைக் குறித்த அனைத்து விபரங்களையும் நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி: கையொப்பம்:

இடம்: பெயர்:

நோயாளியின் ஒப்புதல்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும் மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறையைப் பற்றியும் தொடர்ந்து எனது உடல் இயக்கத்தை கண்காணிக்கவும், அதனைப் பாதுகாக்கவும் பயன்படும் மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றியும் திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது காரணம் எதுவும் கூறாமல் எப்பொழுது வேண்டுமானாலும் இந்த ஆய்விலிருந்து என்னை விடுவித்துக் கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன்.

நான் என்னுடைய சுதந்திரமாகத் தேர்வு செய்யும் உரிமையைக் கொண்டு அழல் கீல் வாயு என்னும் நோய்க்கான "அமிர்த கந்தி குக்கில் வல்லாதி " மற்றும் " இலகு விட முட்டி தைலம் " ஆகியவற்றின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி: கையொப்பம்:

இடம்: பெயர்:

தேதி: சாட்சிக்காரர் கையொப்பம்:

இடம்: பெயர்

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FORM III – CASE PROFORMA

1. OP/ IP No: 2. BED No: 3. Sl. No:

4. NAME: 5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ADMISSION: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

Lecturer **HOD**

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12. COMPLAINTS & DURATION:

13. HISTORY OF PRESENT ILLNESS:

14. PAST HISTORY:

15. FAMILY HISTORY:

16. MENSTRUAL HISTORY (If applicable):

17. HABITS:

	Yes	No
1. Smoker	☐	☐
2. Alcoholic	☐	☐
3. Betel nut chewer	☐	☐
4. Non-Veg /Vegetarian	☐	☐
5. Drug addiction	☐	☐

18. GENERAL EXAMINATION:

1. Body weight [Kg] :
2. Height [cm] :
3. Body Temperature [^{o}F] :
4. Blood Pressure (mmHg) :
5. Pulse Rate /min. :
6. Heart Rate /min. :
7. Respiratory Rate /min. :

		Yes	No
8. Pallor	:	☐	☐
9. Jaundice	:	☐	☐
10. Clubbing	:	☐	☐
11. Cyanosis	:	☐	☐
12. Pedal Oedema	:	☐	☐
13. Lymphadenopathy	:	☐	☐
14. Jugular venous pulsation:		☐	☐

19. CLINICAL EXAMINATION OF KNEE JOINT:

I. INSPECTION	**Present**	**Absent**	
1. Swelling	☐	☐	……
2. Muscle wasting	☐	☐	……
3. Deformity	☐	☐	……

II. PALPATION:	**Present**	**Absent**	
1. Tenderness	☐	☐	……..
2. Swelling	☐	☐	……
3. Crepitations	☐	☐	……
4. Warmth	☐	☐	……

III. MOVEMENTS:

1. Restriction of Movements in the Knee joint: Full ☐ Partial ☐ No ☐

2. KNEE: PAIN MUSCULAR SPASM ROM

	Yes	**No**	**Yes**	**No**	**Normal**	**Reduced**
i. Flexion	☐	☐	☐	☐	☐	☐
ii. Extension	☐	☐	☐	☐	☐	☐

3. NEUROLOGICAL EXAMINATION:

i. Sensation	Normal	☐	Abnormal	☐
ii. Tone	Normal	☐	Abnormal	☐
iii. Power	Normal	☐	Abnormal	☐
iv.Muscle wasting	Present	☐	Absent	☐

4. REFLEXES:	**Normal**	**Exaggerated**
i. Knee jerk	☐	☐
ii. Ankle jerk	☐	☐

20. CLINICAL ASSESSMENT:

I. PAIN:

A. Pain in the knee joints: No ☐ Mild ☐ Moderate ☐ Severe ☐

i. Onset Sudden ☐ Gradual ☐

ii. Nature: Local ☐ Diffuse ☐ Others ☐

B. Nature of pain Shooting ☐ Burning ☐ Others ☐

	YES	***NO***
C. Pain during movements	☐	☐

II. Morning stiffness ☐ ☐

III.Tenderness ☐ ☐

III. Swelling ☐ ☐

IV. Restricted joint movements ☐ ☐

21. EXAMINATION OF OTHER SYSTEMS:

	Normal	**Abnormal**
1. CVS	☐	☐
2. RS	☐	☐
3. CNS	☐	☐
4. ABDOMEN	☐	☐
5. GENITO-URINARY	☐	☐

SIDDHA ASPECTS

1. NILAM:

1. Kurinji ☐ 2. Mullai ☐ 3. Marutham ☐ 4. Neithal ☐ 5. Paalai ☐

2 . KAALAM:

1. Kaar Kaalam ☐ 2. Koothir Kaalam ☐ 3. Munpani Kaalam ☐

4. Pinpani Kaalam ☐ 5. Ilavenir Kaalam ☐ 6. Muduvenir Kaalam ☐

3. YAAKKAI:

1. Vatham ☐ 2. Pitham ☐ 3. Kabam ☐

4. Vathapitham ☐ 5. Pithavatham ☐ 6. Kabavatham ☐

7. Vathakabam ☐ 8. Pithakabam ☐ 9. Kabapitham ☐

4. GUNAM:

1. Sathuvam ☐ 2. Rasatham ☐ 3. Thamasam ☐

5. IYMPORIGAL: Normal Affected

1. Mei ☐ ☐ ..……..

2. Vaai ☐ ☐ ……...

3. Kan ☐ ☐ ……

4. Mookku ☐ ☐ ……

5. Sevi ☐ ☐ ……

6. KANMENDHIRIUM / KANMAVIDAYAM:

Normal Affected

1. Kai ☐ ☐ ……...

2. Kaal ☐ ☐ ……...

3. Vaai ☐ ☐ ……..

4. Eruvaai ☐ ☐ ……..

5. Karuvaai ☐ ☐ ……..

7. UYIR THATHUKKAL:

I. VATHAM: **Normal** **Affected**

1. Piraanan ☐ ☐ ……

2. Abaanan ☐ ☐ …….

3. Viyaanan ☐ ☐ …….

4. Uthaanan ☐ ☐ ……

5. Samaanan ☐ ☐ ……

6. Naagan ☐ ☐ …….

7. Koorman ☐ ☐ ……...

8. Kirukaran ☐ ☐ ……...

9. Devathathan ☐ ☐ ……

10. Dhananjeyan ☐ ☐ ……

II. PITHAM : **Normal** **Affected**

1. Analam ☐ ☐ …….

2. Ranjagam ☐ ☐ …….

3. Saathagam ☐ ☐ ……..

4. Aalosagam ☐ ☐ …….

5. Prasagam ☐ ☐ ……..

III. KABAM: **Normal** **Affected**

1. Avalambagam ☐ ☐ ……
2. Kilethagam ☐ ☐ ……
3. Pothagam ☐ ☐ ……
4. Tharpagam ☐ ☐ ……...
5. Santhigam ☐ ☐ ……

8. UDAL THATHUKKAL: Normal Affected

1. Saaram ☐ ☐ ……
2. Senneer ☐ ☐ ……
3. Oon ☐ ☐ …….
4. Kozhuppu ☐ ☐ …….
5. Enbu ☐ ☐ …….
6. Moolai ☐ ☐ ……
7. Sukkilam/Suronitham ☐ ☐ …….

9. ENVAGAI THERVUGAL:

1 **. Naadi** …….

Normal **Affected**

2. **Sparisam** ☐ ☐ ……..

3. **Naa** ☐ ☐ ……

4. **Niram** ☐ ☐ ……..

5. **Mozhi** ☐ ☐ ……..

6. **Vizhi** ☐ ☐ ……..

7. **Malam**

a. Niram ☐ ☐ ……..

b. Nurai ☐ ☐ ……..

c. Kirumi ☐ ☐ ……..

d. Thanmai: i. Irugal ☐ ii. Ilagal ☐

8. Moothiram:

I. NEERKKURI Normal Affected

a. Niram ☐ ☐ ……..

b . Manam ☐ ☐ ……..

c. Edai ☐ ☐ ……..

d. Nurai ☐ ☐ ……..

e. Enjal ☐ ☐ ……..

II. NEIKKURI: …….

Vatha Neer ☐ Pitha Neer ☐ Kaba Neer ☐

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Form IV - LABORATORY INVESTIGATIONS

1. OP/ IP No: 2. BED No: 3. Sl. No:

4. NAME: 5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ENROLMENT: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

Lecturer **HOD**

Date:

I. BLOOD:

1. TC : (Cells/Cumm)
2. DC (%): N L M E
3. ESR (mm) : ½ hr 1 hr
4. Hb:
5. Total RBC:

6. Blood Sugar: a) Fasting b) Post prandial

7. Kidney function tests:

   Blood urea: Serum creatinine:

8. Lipid profile:

   HDL: LDL: VLDL:

   Total Cholesterol : TGL:

9. Liver Function tests:

   SGOT: SGPT: Alk. Phosphatase:

   Albumin: Globulin: Total Protein:

   Serum Bilirubin: Total Direct Indirect :

II. URINE:

1. Albumin :
2. Sugar :
3. Epithelial cells :
4. Pus cells :
5. Red blood cells :
6. Casts/Crystals :

III. MOTION:

1. Ova :
2. Cyst :
3. Occult blood :
4. Pus cells :

IV. X-RAY:

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FORM V – CLINICAL ASSESSMENT

1. OP/ IP No: 2. BED No: 3. Sl. No:

4. NAME: 5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ADMISSION: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

Lecturer **HOD**

CLINICAL EXAMINATION OF KNEE JOINT:

I. INSPECTION:	**Present**	**Absent**	
1. Swelling	☐	☐	……
2. Muscle wasting	☐	☐	……
3. Deformity	☐	☐	……

II. PALPATION:	**Present**	**Absent**	
1. Tenderness	☐	☐	……

2. Swelling ☐ ☐ ……

3. Crepitations ☐ ☐ ……

4. Warmth ☐ ☐ ……

III. MOVEMENTS:

1. Restriction of Movements in the Knee joint: Full ☐ Partial ☐ No ☐

2. KNEE: PAIN MUSCULAR SPASM ROM

	Yes	**No**	**Yes**	**No**	**Normal**	**Reduced**
i. Flexion	☐	☐	☐	☐	☐	☐
ii. Extension	☐	☐	☐	☐	☐	☐

3. NEUROLOGICAL EXAMINATION:

i. Sensation: Normal ☐ Abnormal ☐ ……...

ii. Tone Normal ☐ Abnormal ☐ ……..

iii. Power Normal ☐ Abnormal ☐ ..……

iv. Muscle wasting: Present ☐ Absent ☐ …….

4. REFLEXES:	**Normal**	**Exaggerated**
i. Knee jerk	☐	☐
ii. Ankle jerk	☐	☐

20. CLINICAL ASSESSMENT:

I. PAIN:

A. Pain in the knee joints:		No ☐	Mild ☐	Moderate ☐	Severe ☐
i. Onset	Sudden ☐		Gradual ☐		
ii. Nature:	Local ☐		Diffuse ☐		Others ☐
B. Nature of pain	Shooting ☐		Burning ☐		Others ☐

	Yes	**No**
C. Pain during movements	☐	☐
II. Morning stiffness	☐	☐
III.Tenderness	☐	☐
III. Swelling	☐	☐
IV. Restricted joint movements	☐	☐

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FORM - VI PATIENT WITHDRAWAL FORM

1. OP / IP No …… 2. S.No. …… 3.Date: ……

4. Name …….. 5. Age …… 6. Gender ……

7. Postal address:

Complaints and Duration:

Irregular treatment:

Other causes:

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FORM VII - DRUG COMPLIANCE FORM

Name of the Drug: AMIRTHA KANDHI KUKKIL VALLATHY

Drugs issued: ……(mgs/Grams)

Drugs returned: ……(mgs/Grams)

S.NO	DATE	DRUG TAKEN TIME		
		MORNING/TIME	AFTERNOON/TIME	NIGHT/TIME
Day 1				
Day 2				
Day 3				
Day 4				
..				
..				
Up to day 48				

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

Bibliography

BIBLIOGRAPHY

- 🕮 Agasthiyar Guru Naadi Nool.
- 🕮 Agathiyar gunavagadam
- 🕮 Agathiyar vallathy 600.
- 🕮 Davidson's principles and practice of medicine.
- 🕮 External therapies of siddha medicine-Dr .T .Thirunarayanan & Dr. R. Sudha
- 🕮 Graham Apley's system of orthopaedics and fractures
- 🕮 Gray's Anatomy - 36th edition
- 🕮 Gunapadam Mooligai Vaguppu-Dr.C.S.Murugesa mudhaliyar
- 🕮 Gunapadam Thathu Jeeva Vaguppu - Dr. Thiyagarajan, HPIM
- 🕮 Harshmohan's text book of Pathology
- 🕮 History of siddha medicine by N.Kandaswamy pillai,DIM, Chennai-106
- 🕮 Hutchinsons clinical methods
- 🕮 Indian meteria medica vol i & ii-Dr.k.m.nadkarni
- 🕮 Maruthuvar thanipadal thirattu
- 🕮 Noi Naadal Noi Mudhal Naadal Thirattu-part 1 -Dr.P. Shanmugavelu.
- 🕮 Orthopaedic and Traumatology – Natarajan
- 🕮 Orthopaedic and Traumatology- G.S.Kulkarni
- 🕮 Pararasasegaram.
- 🕮 Pathartha guna chinthamani.
- 🕮 Sabapathy kaiyedu
- 🕮 Siddha maruthuvam (podhu)-Dr. Kuppusamy mudaliyar, BIM.
- 🕮 Siddha Maruthuvam Sirappu-Dr. R.Thiyagarajan, BIM.

🕮 Siddha Maruthuvanka Churukkam- Dr.K.S. Uthamarayan, HPIM.

🕮 Siddha vaithiya thirattu

🕮 Siddhar aruvai maruthuvam-Dr.C.S.Uthamarayan.

🕮 T. V. Sambasivam Pillai Tamil English Dictionary.

🕮 Taxonomy of Angiosperms - Dr. S. Somasundaram, M.Sc., Ph.d.

🕮 Text book of Orthopedics 4th edition -John Ebnezar

🕮 Theraiyar vagadam.

🕮 Thirumoolanayanar seegicha rathnadeepam.

🕮 Thirumoolar thirumanthiram.

🕮 Thotra Kirama Araicheium Siddha Maruthuva Varalarum

🕮 Udal thathuvam.

🕮 Varma pulligalin irupidam-Dr. Kannan Rajaram, B.S.M.S.,

🕮 Yoga Sathana - S.V. Venkadeshwaran, M.Sc., M.Phil.

🕮 Yugi Vaithya Chinthamani 800.

🕮 McCaffery. M., Beebe. A., (1989). Pain: Clinical manual for nursing practice, Mosby St. Louis, MO

🕮 Conaghan, Phillip., (2008) Osteoarthritis - National clinical guideline for care and management in adults, pg 3-4

🕮 MMWR Morb Mortal., (2001) Prevalence of disabilities and associated health conditions among adults—United States, 1999,

🕮 FloodJ.,(March 2010).The role of acetaminophen in the treatment of osteoarthritis. American Journal Management Care.16.

🕮 French HP., Brennan A., white B., Cusack T., (2011). Manual therapy for osteoarthritis of the hip or knee- a systemic review. Manual Therapy. 16. Pp 109-117

📖 Brooks P., (2003) Inflammation as an important feature of osteoarthritis. Bull World Health Organ. 81: pp 689-690.

📖 DT Felson, MT Hannan, JJ Anderson and A Naimark.,(1990) Occupational physical demands (phys), knee bending (bend) and X-ray knee osteoarthritis (OA): The Framingham Study, . Arthritis and Rheumatism, 33 (1990), p. 10 (supplement)

📖 D.F. McWilliams., B.F. Leeb., S.G. Muthuri., M. Doherty., W. Zhang., (July 2011). Occupational risk factors for osteoarthritis of the knee: a meta-analysis. Osteoarthritis and Cartilage. Volume 19, Issue 7. pp 829-839

📖 F.Callahan., Leigh.,B.Knight., Joshua., H. Shreffler., Jack., Schoster., Britta., B. Renner., Jordan., M. Jordan., Joanne., (2010). Abstracts of the American College of Rheumatology. Arthritis & Rheumatism, Volume 62,

📖 David T. Felson MD, MPH., Yuqing Zhang DSc., Marian T. Hannan DSc.,AllanNaimark., Barbara Weissman MD., Piran Aliabadi MD., Daniel Levy., (DEC 2005). Risk factors for incident radiographic knee osteoarthritis in the elderly. The Framingham study. Arthritis & Rheumatism.Volume 40, Issue 4, pages 728–733,

📖 David T. Felson, M.D., M.P.H., (February 23, 2006). Osteoarthritis of the Knee.New England Journal of Medicine.354.pp 841-848.

📖 Knoop J, Steultjens MP., van der Leeden M., van der Esch M., Thorstensson CA.,Roorda LD, Lems WF.,Dekker J.,(2011). Proprioception in knee osteoarthritis: a narrative review.Osteoarthritis cartilage.19 (4).pp 381-388.